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TECHNICAL REPORT
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**NUTRITIONAL AND HEDONIC
CONSEQUENCES OF CONSUMING
THE MEAL, READY-TO-EAT (MRE) VIII
OR THE SOLDIER ENHANCEMENT
PROGRAM (SEP) MRE**

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OCTOBER 1990 to SEPTEMBER 1991

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United States Army Natick Research, Development
and Engineering Center, Natick, MA 01760-5000

SOLDIER SCIENCE DIRECTORATE

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13. ABSTRACT (Maximum 200 words) A seven-day field test was conducted to evaluate the relative acceptability and consumption of the Meal, Ready-to-Eat (MRE) VIII and an MRE including 29 new items developed under the Soldier Enhancement Program (SEP MRE). The test was conducted with two companies (n=167 total) of soldiers from the 25th Infantry Division (Light) during June-July '91 training exercises at the Ft. Rucker Training Area, FL. Each company consumed one of the two rations exclusively. The SEP MRE was found to be superior to the MRE VIII in terms of acceptability of the entrees, starches, spreads, desserts, and candies. New SEP milk shakes and snacks were also well received. Greater satisfaction with the SEP MRE was also apparent in terms of higher average daily intake for that group (2670 kJals) relative to intake for the MRE VIII group (1956 kJals). Energy intake for the SEP MRE group was not significantly lower than the MRE VIII (2800 kJals) whereas intake for the MRE VIII group did not meet this criterion. Neither group met the MDAs for consumption of protein and carbohydrate and the SEP MRE group was somewhat high in terms of the percentage of calories consumed in the form of fat (40.1%). The addition of fortified items such as MRE hot cocoa is needed in the SEP MRE. Weight loss and dehydration were not problematic for either group under the conditions of the present test. However, to reduce the risk of these problems under more demanding conditions, additional steps are needed to promote more complete usage of the foods and beverages provided in rations.				
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PREFACE

The data for this report were collected by investigators from the U.S. Army Natick Research, Development and Engineering Center Natick during the 25th Infantry Division's Opportune Journey 2-91 and Union Pacific '91 training exercises. Data collection took place during the period 26 June -3 July 1991 at the Pohakuloa Training Area (PTA) on the island of Hawaii. This report encompasses nutrient and water intake, ration acceptability, and human factors issues related to the use of the Meal, Ready-to-Eat (MRE) VIII and the Soldier Enhancement Program (SEP) MRE. These were evaluated by Soldier Science Directorate, Natick's, with support from the U.S. Army Research Institute of Environmental Medicine (USARIEM), under Project No. 1L162786AH99BFE00.

Subjects participated in this study after giving their free and informed voluntary consent. Investigators adhered to AR 70-25 and USAMRDC Regulation 70-25 on Use of Volunteers in Research.

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The authors wish to thank Elaine Christensen and SSG Douglas Dauphinee of USARIEM for their help in collecting the data. We also thank Natick's Soldier Science Directorate employees F. Matthew Kramer and Kathryn Rock for their assistance in planning and preparation, Ann Lalonde for dealing with the paperwork, and Jennifer Bertolami, Kristen Kupperschmidt, and Celine Saulnier for their assistance with data entry and report preparation. We would also like to express our appreciation to Vicki Loveridge of the Food Engineering Directorate. As project officer of the Operational Ration Improvement Project of the Soldier Enhancement Program, Ms. Loveridge coordinated the production tests of the new SEP components, the in-house assembly of the meals, and the shipping of the rations to the test site. She also assisted with data collection during the test. We thank SFC Kenneth Bradley, of the Operational Forces Interface Group for coordinating test site and subject unit selection.

The logistical requirements of conducting this type of an evaluation are always considerable. But the logistics of conducting this evaluation on the island of Hawaii, right before the influx of thousands to view a solar eclipse, were truly amazing. We extend our sincere thanks to Mr. Glenn Sakamoto and Mr. Masao Wakatake (U.S. Army Support Command, Ft. Shafter, HI), LTC Beahm and Mr. Steven Troute (PTA, HI), MAJ Melvin S. Tamaye (2nd Battalion, 299th Infantry Division, American National Guard, Hilo, HI) and their assistants for facilitating food shipment, providing work space and vehicles, and generally helping us succeed in our endeavor!

Finally, we would like to express our gratitude to the officers and soldiers of the 1-21st Infantry Battalion, 25th Infantry Division (Light) for their outstanding support and cooperation during all phases of the evaluation. At division level, the assistance provided by BG Covault and CW3 Hill was essential to the successful completion of this test and was greatly appreciated. At battalion level, we wish to thank LTC Adamczyk, MAJ Fowler, CPT Helbling, CPT Smith, LT Reed, and 1SG Sells.

Nutritional and Hedonic Consequences of Consuming the MRE VIII or the SEP MRE

Introduction

The Meal, Ready-to-Eat (MRE) has replaced the Meal Combat Individual (MCI) as the Army's operational ration. The MRE is designed to be eaten by troops in the field when hot meals are not available. Current policy allows this ration to be fed for up to 10 days as the sole source of food (TB MED 141 (1971), IB 8-250 (1974) and TM 8-501 (1961)). As hot meals become available, troops will initially be fed one hot meal and two MREs per day and then will transition to two hot meals and one MRE, the current standard for field feeding.

Initial testing of the MRE focused on comparing its acceptability to the acceptability of the MCI by troops engaged in routine field training.^{1,2} Data from approximately 1,000 troops who consumed these rations for an average of three days indicated that the individual components of the MRE were highly rated on a standard 9-point hedonic scale (1= dislike extremely, 5= neither like nor dislike, 9= like extremely).³ In addition, a final questionnaire revealed that the average rating for MRE components was significantly higher than for MCI food items (MRE mean = 5.94, MCI mean = 5.04). A Marine Corps test included in this report¹ also revealed that a statistically significant proportion of these troops, 85.5 percent, preferred the MRE to the MCI.

Subsequent evaluations of the MRE have documented that, although better liked than the MCI, early versions of the MRE (MRE I - MRE VI) were associated with problems of low caloric intake and weight loss in troops subsisting on this ration in temperate environments.^{4,5} These studies reported that while the test subjects were provided with an average of 3600 kcal per day in three MREs, they typically did not

consume more than 61 to 70 percent of the available calories. In both cases, intake fell below the minimum Military Recommended Dietary Allowance (MRDA)⁶ of 2800 kcal/man/day for moderately active men in temperate environments and subjects lost weight.

Modifications to later versions of the MRE (MRE VII, Improved MRE, and currently, MRE VIII) have been designed to increase levels of caloric intake primarily by making the MRE foods more acceptable. To this end, menus have been reformulated, entree portion size has been increased, fruit-flavored beverage powders have been included in all menus, and commercial candies and hot sauce have been added. These changes have been successful in promoting consumption in both temperate⁵ and cold weather^{7,8} environments. However, the increased intake that has been noted with the improved rations still has not been sufficient to allow soldiers to maintain body weight in the field.

Additional improvements to the MRE have now been proposed under the Soldier Enhancement Program (SEP). As a result of consumer research surveys, 29 new MRE items have been identified and procured for user testing. The new items include entrees, cakes, milk shakes, pouch breads, and a variety of snack foods. Initial field testing (Ft. Leonard Wood, MO, April 1991) of the MRE containing these new items, the "SEP MRE," has indicated high acceptance. The issue of caloric intake was not addressed in this initial test. The study described in this report is a comprehensive field evaluation designed to determine both the relative acceptability and consumption of the MRE VIII and the SEP MRE.

Objectives

The major objective of this test was to compare the performance of the MRE VIII and the SEP MRE when these two versions of the MRE ration are fed as the sole source of food for 7 days. There were four specific issues addressed in this test.

1 - Which version of the MRE is eaten in sufficient quantity over 7 days to meet the Surgeon General's MRDA for protein, vitamins, minerals, fat and energy for operational rations? If intake fails to meet these criteria with both versions of the MRE, then which version of the ration supports the highest level of consumption?

2 - Will troops subsisting on only the MRE for 7 days consume sufficient calories to meet the energy demands associated with field operations? If the groups show differential patterns of weight change over time, the question becomes which version of the ration leads to the least weight loss.

3 - Do troops fed the MRE as the sole source of food drink sufficient fluids and water to maintain adequate hydration? If hydration status is inadequate, which version of the ration supports levels of fluid intake associated with the lowest urine specific gravity?

4 - Are troops eating only the MRE for 7 days satisfied with the ration? Do the changes that have been incorporated into the SEP MRE lead to improvement in consumer satisfaction relative to MRE VIII?

Method

Subjects

The 167 male soldiers who participated in this test were members of C Company or Headquarters and Headquarters Company of the 1-21st Infantry Battalion, 25th Infantry Division (Light), regularly stationed at Schofield Barracks, HI. Data collection took place while these troops were engaged in Exercises Opportune Journey 2-91 and Union Pacific '91 at the Pohakuloa Training Area (P.T.A.), HI. Infantry units were selected for this test because the rations under study were designed for use primarily by the mobile individual without reliable access to vehicles or large group field feeding facilities. The demographic characteristics of the two companies are described in the Results section of this report.

Test Design

Pretest briefings were held at Schofield Barracks 2 to 5 days prior to the start of the test. The majority of subjects arrived at P.T.A. base camp not more than 24 hours before testing began. The test itself was conducted during the first 7 days (26 June - 2 July, 1991) of an extended field training period. Subjects deployed to the field on Day 1, after consuming their morning MRE rations at P.T.A. base camp, and remained in the field through Day 7. During the 7-day test, subjects consumed the MRE VIII or the SEP MRE as their sole means of subsistence. No supplemental foods or beverages ("pogey bait") were permitted for the entire study period. Water was available throughout the test period. On 3 July, troops returned to base camp and were granted approximately 24 hours leave prior to returning to the field. Ration Heater Questionnaires and Final Questionnaires were administered to subjects on 3 July, prior to their withdrawal from

the field or prior to their taking leave from base camp.

The existing Company structure was used as the basis for dividing subjects into two groups. While random assignment is preferable from a scientific perspective, the practical benefits afforded by working with intact units and existing chains of command make the present assignment strategy the clear method of choice under the conditions imposed by military structure and field operation. Members of C Company (n=73) were fed only SEP MREs for the duration of the test, and members of Headquarters and Headquarters Company (n=94) were fed only MRE VIIs for the same period. Forty volunteers from each Company were requested to provide detailed daily information (food and fluid intake, weight, urine sample) during the test, in addition to completing pre- and poststudy questionnaires. Ten of the 40 volunteers from each Company were also asked to participate in discussion groups known as focus groups. Remaining members of each Company were requested only to provide information on pre- and poststudy questionnaires. By virtue of their mission requirements, members of C Company tended to remain in close proximity while members of Headquarters and Headquarters Company were dispersed throughout the training area. However, with few exceptions, the two groups remained separate throughout the test period.

Pretest Briefings

Pretest briefings were conducted separately for each of the two Companies 5 days before the test began. Each group was informed of the purpose of the test and was told that they would be required to eat only MREs during the test. The groups were told what information would be needed from them and approximately how much time they could expect to spend providing this information. Troops were shown the Flameless Ration

Heater (FRH) and were given brief instructions on its use. (Appendix A contains a copy of the instructions printed on each heater.) Following a question and answer period, individuals were requested to read and complete the Volunteer Agreement Form (Appendix B) to acknowledge their willingness to participate. At this point, all volunteers completed a Background Questionnaire (Appendix C) and then returned to their duties.

Subgroups of approximately 40 volunteers from each Company returned separately for additional briefings 2 days prior to the start of the test. At this time, subjects met with the data collector (about 13 subjects/data collector) that would be assigned to them throughout the study. The data collector restated the test goals and requirements, repeated the usage instructions for the FRH, and provided detailed instructions for completing the daily MRE Intake Record (Appendix D). Troops were given a chance to look at the FRH and were encouraged to ask questions regarding the heater, the Intake Records, or any aspect of the test. Subjects were then issued supplies for the first day and returned to their regularly scheduled activities.

Supplies and Distribution

MRE VIII. The MRE VIII contains individual servings of flexibly packaged foods that are heat processed in retortable pouches (wet-pack entrees, potatoes, and applesauce), vacuum sealed (cookies, brownies, and cakes), or dehydrated (fruits). Coffee, cocoa, and fruit-flavored beverage mixes are also included in the MRE VIII. The 12 menus included in the MRE VIII ration are shown in Table 1. A breakdown of the nutrient content for each menu is available in Appendix E. Each MRE menu is packaged in a sealed, flexible plastic meal bag.

Table 1. Menus in the Meal, Ready-to-Eat VIII ration.*

Menu 1	Pork w/ Rice in BBQ Sauce Applesauce Jelly Crackers	Candy Cocoa Beverage Powder Hot Sauce
Menu 2	Corned Beef Hash Pears Jelly	Crackers Oatmeal Cookie Bar Cocoa Beverage Powder
Menu 3	Chicken Stew Peaches Peanut Butter Crackers	Candy Cocoa Beverage Powder Hot Sauce
Menu 4	Omelet w/ Ham Potatoes au Gratin Cheese Spread	Crackers Oatmeal Cookie Bar Cocoa Beverage Powder
Menu 5	Spaghetti w/ Meat & Sauce Cheese Spread Crackers	Maple Nut Cake Hot Sauce
Menu 6	Chicken a la King Pears Peanut Butter	Crackers Candy Cocoa Beverage Powder
Menu 7	Beef Stew Peanut Butter Crackers	Cherry Nut Cake Hot Sauce
Menu 8	Ham Slices Potatoes au Gratin Jelly	Crackers Brownie Cocoa Beverage Powder
Menu 9	Meatballs w/ Rice & Sauce Fruit Mix Peanut Butter	Crackers Chocolate Covered Cookie
Menu 10	Tuna w/ Noodles	Crackers

	Cheese Spread	Chocolate Nut Cake
Menu 11	Chicken and Rice Peaches Cheese Spread	Crackers Chocolate Covered Cookie Candy
Menu 12	Escalloped Potatoes w/ Ham Applesauce Jelly	Crackers Brownie Cocoa Beverage Powder

* All menus include fruit-flavored beverage powders, instant coffee, nondairy cream substitute (powder), granulated sugar, salt, and candy coated chewing gum. Caramels, Charms, or M&Ms may be included as a candy. Nonfood components of the ration are spoon, matches, toilet tissue, and towelette.

SEP MRE. The SEP MRE consists of 12 menus that were assembled for the purpose of this test. The SEP MRE described herein is not an official version of the MRE. Rather, the SEP MRE evaluated in this test represents one possible configuration of proposed food items. Among these items are several carry-overs from the MRE VIII and 29 new items procured for user testing under the Soldier Enhancement Program. Packaging of the SEP MRE was much the same as that for the MRE VIII, including foods that were heat-processed in retortable pouches (wet-pack entrees, potatoes, and fruit), vacuum sealed (cookies, cakes, dessert bars, snack foods, and milk shakes), or dehydrated (fruits). Coffee, apple cider, lemon tea mixes, and fruit-flavored beverage mixes were also included in the SEP MRE. The menus in the SEP MRE ration are shown in Table 2. Nutrient information for these menus is provided in Appendix F. SEP MRE menus were packaged in the same flexible plastic meal bags used for the MRE VIII ration.

Table 2. Menus in the SEP Meal, Ready-to-Eat ration.*

Menu 1	Pork w/ Rice in BBQ Sauce Pears (Wet Pack)* Cheese Curls	Caramels Chocolate Shake Hot Sauce
Menu 2	Beef w/ Mushroom Gravy Pouch Bread (Wheat) Corn Chips	Almond Chew Bar Choc. Covered Cookie Fruit Beverage Base
Menu 3	Beef & Cheese Pocket Pears (Wet Pack)* Corn Chips	Cheese Spread Fruit Beverage Base Hot Sauce
Menu 4	Pork Chow Mein Chow Mein Noodles Vanilla Pound Cake	M & Ms Apple Cider Mix** Hot Sauce
Menu 5	Spaghetti w/ Meat & Sauce Cheese Spread Crackers	Orange Pound Cake Fruit Beverage Base Hot Sauce
Menu 6	Smokey Franks Pouch Bread (White) Potato Sticks	Orange Coconut Chew Bar Chocolate Shake Condiments
Menu 7	Creamed Chipped Beef Biscuit Peaches (Wet Pack)*	Tavern Nuts Oatmeal Hermit Chew Bar Lemon Tea Mix**
Menu 8	Ham Slices Pouch Bread (White) Potato Sticks Cheese Spread	Tropical Punch Chew Bar Caramels Orange Beverage Base**
Menu 9	Cheese Pizza Peaches/Pears (Dehydrated) Onion Rings	Lemon Pound Cake Strawberry Shake Hot Sauce
Menu 10	Tuna w/ Noodles Cheese Spread Crackers	Chocolate Pound Cake Fruit Beverage Base

Menu 11	Chicken & Rice Peaches (Wet Pack)* Cheese Spread Crackers	Chocolate Covered Cookie M&Ms Fruit Beverage Base
Menu 12	Escalloped Potatoes w/ Ham <i>Pretzel Sticks</i>	<i>Pineapple Pound Cake</i> <i>Vanilla Shake</i>

* New SEP items appear in italics. Items included from the Ration, Cold Weather are indicated by **. Developmental MRE items are indicated by *. All menus include instant coffee, nondairy cream substitute (powder), granulated sugar, salt, and candy coated chewing gum. Nonfood components of the ration are spoon, matches, toilet tissue, and towelette.

Flameless Ration Heater. The FRH was issued to all test participants because this heater will be packaged with the MRE ration in the near future. The ration heaters were designed and produced by ZestoTherm, Inc., Cincinnati, OH. The heater is composed of a 40/60 mixture of active magnesium-iron powder and inert plastic powders that have been molded into a stable 4.5 by 3.5 by .12-inch pad weighing one ounce. Each heater pad is packaged in a bag designed to hold one MRE entree. When water (two fluid ounces) is added to the bag, the pad reacts with that water to produce heat. The heater will raise the temperature of an 8-ounce MRE entree 100 °F (e.g., from 40 °F to 140 °F) in about 12 minutes. Differences between the current FRH and that evaluated in earlier studies^{9,10} include addition of an acid component to increase the speed of the chemical reaction, replacement of the detergent wetting agent with a nondetergent agent, and inclusion of an FRH bag designed to accommodate the MRE entree. Warnings and operating instructions are printed on the outside of every FRH bag (Appendix A).

Distribution. Natick provided rations, heaters, and meal trash bags (Ziploc®, freezer bags, gallon size) for the test. All members of the two Companies received three MREs per day through their usual Army ration supply personnel. Company members

who were not providing daily data also received their three heaters per day from the ration supply personnel. Data collectors distributed heaters (3/day), trash bags (3/day), and urine collection vials (5 times) to their subjects at the pretest briefings and at the daily meetings in the field.

Data Collection

A summary of the information gathered in this study is provided in Table 3. A description of each of the measures follows the table.

Table 3. Dependent measures and data collection schedule.

<u>Dependent Measure</u>	<u>Frequency</u>	<u>N</u>
Background Questionnaire	At Initial Briefing	Entire Company
Body Weight	5X (d1, 2, 4, 6, 7)	Approx. 40/Co
Urine Sample	5X (d1, 2, 4, 6, 7)	Approx. 40/Co
Food Consumption	Daily	Approx. 40/Co
Water Consumption	Daily	Approx. 40/Co
Food Acceptability	Every Meal	Approx. 40/Co
Focus Group	Once (d6)	10 of the 40/Co
Ration Heater Questionnaire	After Last Meal	Approx. 40/Co
Final Questionnaire	After Last Meal	Entire Company

Background Questionnaire. Subjects were asked to complete a short questionnaire at the initial prestudy briefing. For subjects in the MRE VIII group, the questionnaire was used to collect solely demographic information. For subjects in the SEP MRE group, the Background Questionnaire included questions designed to

ascertain how much individuals normally liked/disliked (i.e. when served at home, in a restaurant, or purchased in a supermarket) the items new to the SEP MRE and how much they expected to like these items if they were included in the MRE.

Body Weight. As shown in Table 3, morning body weights were taken at five points during the study. Body weights were measured in the morning prior to consuming the first meal of the day. On each of these occasions, subjects were asked to remove helmets, equipment belts, weapons, and, if possible, outer garments before being weighed on Seca digital scales (Model 770). Data collectors completed a Weight Checklist (see Appendix G) to indicate clothing items (e.g., shirt, pants, long johns, T-shirt, socks) worn at the time of weighing. Body weights were adjusted accordingly.

Urine Samples. On the mornings when body weights were taken, subjects were also asked to turn in a sample of their first urination of the day. Subjects were provided with clean inert containers to use for urine collection. Hydration status was assessed by measuring the urine specific gravity of aliquots of this sample with an American Optical Reichert Total Solids Meter (refractometer).

MRE Intake Records. Soldiers were given MRE Intake Records (Appendix D) to keep track of their own food and water consumption. One Intake Record was issued per day. The MRE Intake Record included a list of food items that subjects used to indicate everything that they had received in their MREs on a given day. Next to the food list, they also indicated how much of the item they had consumed (0, 1/4, 1/2, 3/4, ALL or ____ (fill in the blank for more than one portion)), time of day (military time) the item was consumed, and how many canteen cups of water were added to the item (e.g., water added to dehydrated fruits or to hot/cold beverage powders). This form was also used to record an acceptability rating for each item eaten on individual

days. Ratings were made using a 9-point hedonic scale³ where 1 = dislike extremely, 5 = neither like nor dislike, and 9 = like extremely. After rating each item, subjects indicated whether or not they had heated that item and wrote in the heating method used. A place was provided on the back of the Intake Record to record the quantity (in terms of canteens) of plain water drunk with and between meals.

The MRE Intake Form was also used as a convenient place to collect information on self-reported feelings (using a 9-point scale where 1 = not at all, 9 = extremely) of premeal hunger, fullness, and thirst. In an attempt to address the issue of social influence on field feeding, we also asked subjects to use this form to indicate the number and type ("friends" or "other men in the Company") of people with whom they ate their meals. Finally, each subject reported his activity level once per day using a 5-point scale where 1 = light and 5 = heavy.

Data collectors met with their subjects in the field each morning to answer questions and check for completeness of the MRE Intake Record. To encourage subjects to keep accurate records, the soldiers were issued a trash bag for each MRE and were requested to save all the wrappers and remains of ration items. Data collectors gathered these bags each morning with the stated intent of cross-checking self-reported consumption with actual waste. Any discrepancies noted between records and waste were resolved with the subject the following morning. Previous reports have documented that there is good agreement between these two measures of MRE intake in the field.^{4,5}

Focus Groups. The focus groups met separately on Day 6 of the study for about an hour. The logistics of the field training exercise made it impractical to hold the focus group for Headquarters and Headquarters Company in the field. Therefore, the 10

volunteers from that Company were transported to P.T.A. base camp for the focus group and were then returned to the field. During the group meetings, a moderator asked questions (see Appendix H for the script) pertaining to the ration being fed to the subjects during the test, and generally tried to encourage discussion. Previous studies have shown that focus group discussions are sometimes useful in raising issues that were not considered prior to the study and, therefore, not included in any questionnaire. The focus group sessions were video recorded for later review.

Ration Heater Questionnaire. After completing the study, subjects in the subgroups completed a short questionnaire (Appendix I) designed to evaluate the Flameless Ration Heater. Specifically, this questionnaire requested information pertaining to conditions under which the heaters were used, frequency of heater use, effectiveness of the heater, temperature of the MRE entree after heating, and problems associated with use of the heater. The questionnaire was developed at Natick by members of the Manpower Personnel Integration (MANPRINT) team and has been administered at several sites as part of an extensive evaluation of the Flameless Ration Heater.

Final Questionnaire. The final questionnaire was designed to collect information on the subjects' overall impressions of the MRE VIII (Appendix J) or the SEP MRE (Appendix K) as well as to gather final acceptance ratings for each ration item consumed in the field. Open-ended questions were included to allow the subjects to indicate any items that they would like to see dropped or added to the MRE and to comment on aspects of the ration that may not have been addressed in the questionnaire.

Weather

Weather conditions were invariably moderate with daytime temperatures in the

70s (°F) and nighttime temperatures in the 40s-50s (°F). There was no rain during the test period although heavy fog was common.

Data Analysis

Data reduction and analysis were completed using the Statistical Package for the Social Sciences (SPSS) for personal computers. Since the experimental design consisted of only two groups, between-group differences for dependent measures taken at a single point in time were assessed using t-tests. On those measures that were repeated over time, a two-way analysis of variance (Group x Time) with appropriate post hoc comparisons was used to detect statistically reliable differences. In all cases, the criterion for statistical significance was set at $p < .05$.

Results and Discussion

Sample Demographics

Table 4 summarizes the demographic characteristics of the two companies in terms of average age, rank, height, weight, length of service and region of origin. Chi-square and t-test analyses revealed that the two companies were very similar on these dimensions. The mean age was about 25 years. Approximately 60 percent of the participants in each group were enlisted men with a rank of E-4 or less. Fifty-twopercent of the participants had served in the U.S. Army two years or less. Both groups were similar in height and weight. The highest percentage of subjects came from the North Central region.

Table 4. Demographics for the two groups.

<u>Group</u>	<u>SEP MRE</u>	<u>MRE VIII</u>
N	85	88
Age (yr.)	24.0 (4.8)*	25.0 (6.5)
Length of Service (yr.)	4.5 (4.3)	5.3 (5.4)
Height (in.)	70.0 (2.6)	70.0 (3.3)
Weight (lb.)	174.3 (20.5)	171.7 (23.6)
Trying to Lose Weight (%)	28.2	33.0
Trying to Gain Weight (%)	20.2	25.3
Food Allergies (%)	7.1	5.4
<u>Ethnic Group (%)</u>		
White	60.7	51.7
Afro-American	19.0	28.7
Hispanic	14.3	12.6
Other	6.0	7.0
<u>Region of Origin (%)</u>		
Northeast	6.1	3.6
Mid-Atlantic	8.5	14.3
South Atlantic	14.6	14.3
North Central	34.1	33.3
South Central	11.0	15.5
Mountain	9.8	4.8
Pacific	9.8	10.7
Other	6.1	3.6
<u>Rank (%)</u>		
E1	0.0	1.1
E2	12.9	5.7
E3	35.3	23.9
E4	11.8	37.5
E5	21.2	11.4
E6	11.8	8.0

E7	1.2	4.5
E8	1.2	1.1
E9	0.0	1.1
O1	1.1	1.1
O2	2.4	2.3
O3	1.2	1.1
O4	0.0	1.1

*Numbers in Parentheses are standard deviations.

Body Weight

Table 5 shows the subjects' body weights during the study and the amount of weight lost during the exercise.

Table 5. Changes in mean (SD) body weight for the two groups.

N	SEP MRE 39	MRE VIII 34
Initial (lb.)	170.2 (20.1)	165.2 (22.3)
Final (lb.)	168.3 (19.8)	163.72 (21.4)
Loss (lb.)	1.9 (1.8)	1.5 (3.3)
Percentage Loss	1.1 (1.0)	0.81 (1.9)

Initial body weight was higher in the SEP MRE group than the MRE VIII group, but this difference was not significant. Repeated measures analysis of variance revealed significant main effect for time ($F(3,195) = 11.36, p < .0001$) and time by group interaction ($F(3,195) = 3.98, p < .01$) using baseline body weight as a covariate. Further analysis revealed this effect was due to changes in weight around days 4 and 6 (coinciding with a surprisingly low total kilocalorie consumption on days 4, 5 and 6 in the MRE VIII group). As shown in Table 5, the groups did not differ in absolute weight loss (SEP MRE -1.9 lb., MRE VIII -1.5 lb.) by the end of the study. While this seems in opposition to the fact that the average SEP MRE group consumed more kilocalories,

the greater loss in weight may be due to their tendency to be involved in more vigorous activity than the MRE VIII group. Mean daily activity levels ranged from (2.33 (light - moderate)) to (4.21 (moderate - heavy)) for the SEP MRE group and (2.31 (light - moderate)) to (2.59 (light - moderate)) for the MRE VIII group; mean daily ratings were significantly higher for the SEP MRE group on days two ($t(72) = 7.56, p < .05$), four ($t(72) = 6.3, p < .05$) and five ($t(69) = 2.27, p < .05$).

The Office of the Surgeon General (OTSG) suggests that troops should not lose more than 3 percent of their initial body weight during field operations. Both the SEP MRE and MRE VIII rations met this criterion; the mean percentage of weight loss was well below 3 percent (the SEP MRE group lost 1.1 percent while the MRE VIII group lost 0.81 percent). There were some subjects in each group (5 percent of subjects ($n=2$) in the SEP MRE group, and 17.6 percent of the subjects ($n=6$) in the MRE VIII group) who lost 3 percent or more of their body weight during the field test. It should be noted, however, that four of eight subjects who lost 3 percent or more of their body weight reported that they were trying to lose weight.

Kilocalorie and Nutrient Intake

Kilocalorie (kcal) and nutrient intake were computed on the basis of the food intake records and the known caloric and nutrient composition of the rations. The separate nutrient intake for each of the three meals was combined to calculate the average total nutrient intake per day for each ration group. Figure 1 presents the total kcal intake for both ration groups across each of the 6 days of the study. The SEP MRE ration group consistently consumed more kcals throughout the study; consumption was significantly greater on days one, ($t(70) = 3.06, p < .003$), two, ($t(73) = 2.95, p < .004$), four, ($t(73) = 5.24, p < .0001$), five, ($t(71) = 3.51, p < .001$) and six, ($t(73) = 4.15, p < .001$).

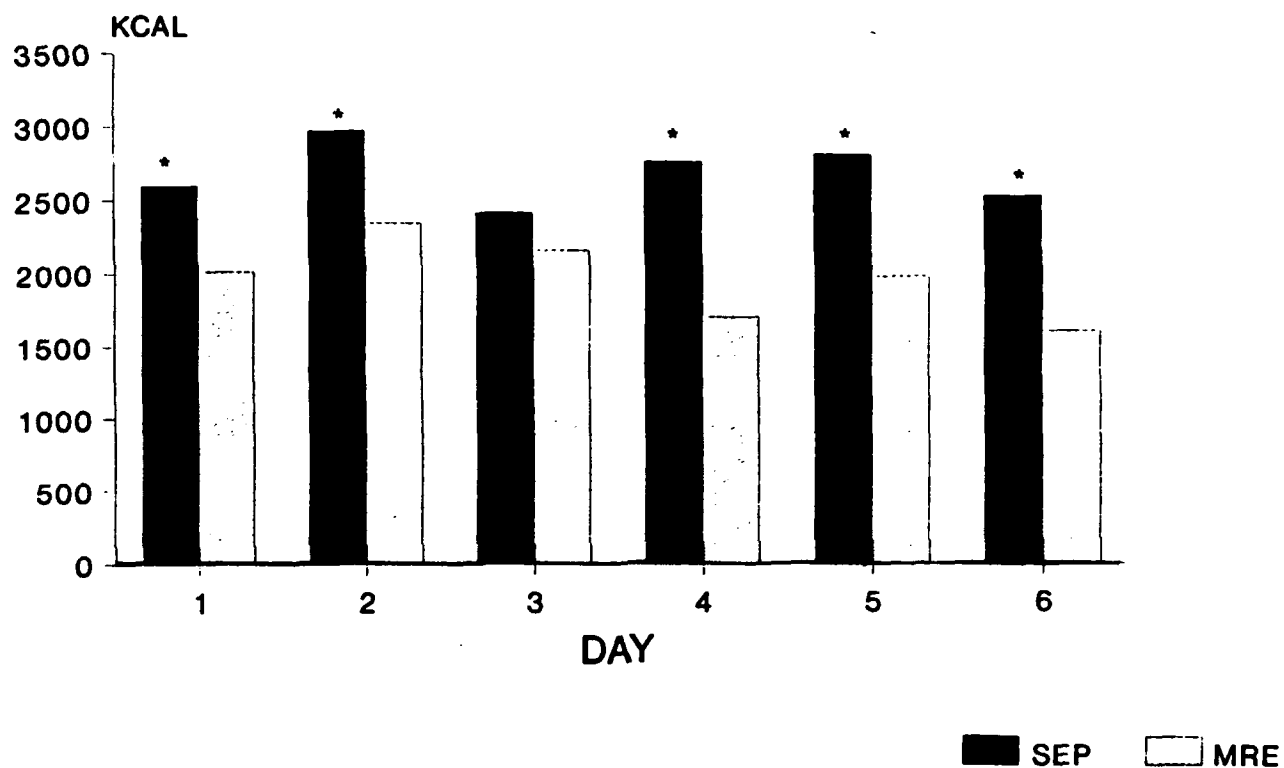


Figure 1. Total Energy Intake Across Days

Table 6 shows the average daily intake of energy, macronutrients, micronutrients and the percentage of calories derived from protein, fat and carbohydrates for the two groups.

Table 6. Average daily nutrient intake by group compared to MRDA.

Nutrient	SEP MRE	MRE VIII	t	df	MRDA	
Energy (kcal)	2670	1956*	4.88	73	2800	
Protein (g)	93*	89*	ns	62	100	
Fat (g)	119	82*	5.61	73	120	
Carbohydrates(g)	307*	217*	5.10	73	330	
Vitamin A (mcg RE)	3181.88*	5594.38	4.77	50	5000	
Thiamin (mg)	1.89	3.4	4.83	44	1.8	
Riboflavin (mg)	1.64*	1.58*	ns	64	2.2	
Niacin (mg NE)	13.66*	22.36	5.92	48	24	
Vitamin B6 (mg)	1.77*	2.61	3.51	55	2.2	
Vitamin B12 (mcg)	0.97*	1.59*	5.64	48	3	
Vitamin C (mg)	51.3	119.09	5.64	48	60	
Sodium (mg)	3762*	3466*	ns	73	5000	
Potassium (mg)	2586	2028	3.51	73	1875	
Iron (mg)	16.43	10.32*	6.03	73	18	
Calcium (mg)	1200	686	6.22	73	800	
Phosphorus (mg)	1682	1256	4.42	73	800	
Magnesium (mg)	235*	207*	ns	54	400	
Zinc (mg)	20.48	7.28*	14.09	54	15	
Chlorine (mg)	7.98	7.29	ns	49	-	
Folacin (mcg)	80.17*	142.39*	6.57	49	400	
Vitamin E (mg)	8.22*	8.68*	ns	43	10	
Cholesterol	127	249	7.25	73	-	
Ash	19.9	14.8	4.87	53	-	
Protein Cal. (%)	14.1	18.8	8.04	48	-	
Fat Calories (%)	40.1*	37.1*	4.69	55	35 max	**
Carbo. Cal. (%)	45.9*	44.1*	ns	52	50-55	
Sodium (mg/1000kcal)	1430*	1852		5.66	54	1700 max

Note:

Nutrient intakes tested against MRDA using t-test, $p < .05$ (one-tailed).

* indicates nutrient for which MRDA is not met.

t value refers to significant difference between ration groups.

** reflects MRDA under garrison feeding conditions (see reference 6)

Between-group differences are noted, and intakes that fall below the MRDA requirements⁶ are indicated by asterisks ($p < .05$; one-tailed t-test). In regard to MRDA kilocalorie consumption, the low end of the acceptable range (2800 - 3600 kcal) was used as the criterion for adequate intake.

Both groups' average daily consumptions were below the minimum MRDA for kcal consumption under moderate work conditions in a temperate environment (MRDA of kcal = 2800). The average daily energy intake for the SEP MRE ration group (2670 kcal) was significantly higher than the energy intake (1956 kcal) of the MRE VIII ration group ($t(73) = 4.88, p < .0001$). On average, subjects in the SEP MRE group consumed 67 percent of the 3967 available kcals while the MRE VIII ration group consumed only 49 percent of the 3945 available kilocalories. Daily mean intake in grams of carbohydrate and protein were below MRDA for both ration groups. For the MRE VIII group, the daily mean intake of fat was also below the corresponding MRDA value. The SEP MRE group consumed significantly more grams of carbohydrate and more grams of fat than the MRE VIII group. Protein consumption (SEP MRE: 93 g; MRE VIII: 89 g) did not differ between the two groups.

In both the SEP MRE and MRE VIII groups, the percentage of calories obtained from carbohydrate (46 percent and 44 percent respectively) fell significantly below the 50-55 percent recommended level, the SEP MRE group ate 69 percent while MRE VIII group consumed only 43.9 percent of the total available carbohydrates. The percent of kilocalories derived from fat was 40.1 percent (SEP MRE) and 37.1 percent (MRE VIII) which meets the MRDA for operational rations.⁶

Many differences between the two groups were observed in terms of micronutrients. The MRE VIII group consumed significantly more cholesterol, thiamin, niacin,

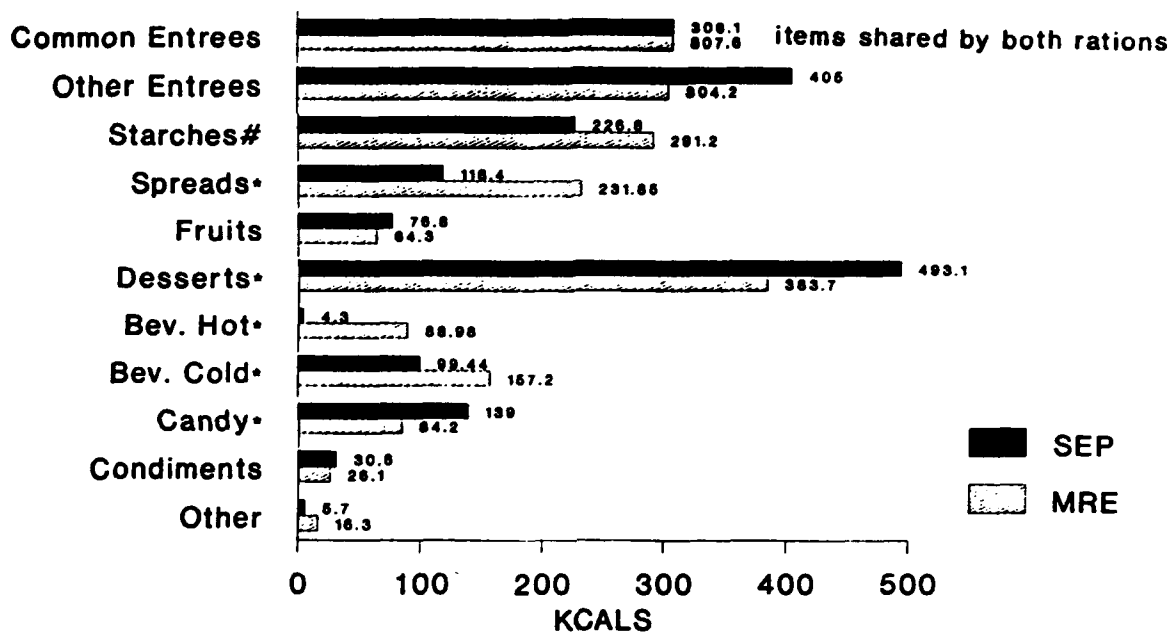
folacin, vitamin A, vitamin B6, vitamin B12 and vitamin C than the SEP MRE group. Many of these differences in daily micronutrient intake may reflect the fact that there were less fortified items in the SEP MRE ration and an incomplete data base. The SEP MRE group consumed significantly more ash, calcium, phosphorus, iron, potassium and zinc. However, when examined in terms of percent consumed relative to total availability, both groups consumed similar percentages of available zinc, cholesterol and vitamin B12. There were no significant differences between groups in total intake of sodium, magnesium, chlorine, riboflavin or vitamin E.

Nutrient Availability

It should be noted that while the mean nutrient composition of the 12 MRE VIII menus meets the MRDA, individual menus (any single meal) of the MRE VIII ration may not meet one-third of the MRDA requirements for micronutrients, thus some combinations of 3 particular menus may not meet the MRDA. The average available amount (across three meals) of some micronutrients (vitamin B12, niacin, magnesium and folacin for the SEP MRE group; zinc and vitamin B12 for MRE VIII) are below the MRDA. As a result, mean daily intakes of these respective micronutrients were also below MRDA.

Average Daily Caloric Intake By Meal Component

As shown in Figure 2, a majority of the kcals consumed by both groups tended to come from entree and dessert items. Both groups consumed nearly identical amounts of the six common entrees: pork with rice, spaghetti with meat sauce, ham slices, tuna with noodles, chicken and rice, and escalloped potatoes with ham. Within the MRE VIII ration group, kcal consumption was nearly identical between the six common entrees



* $p < .05$; # trend.

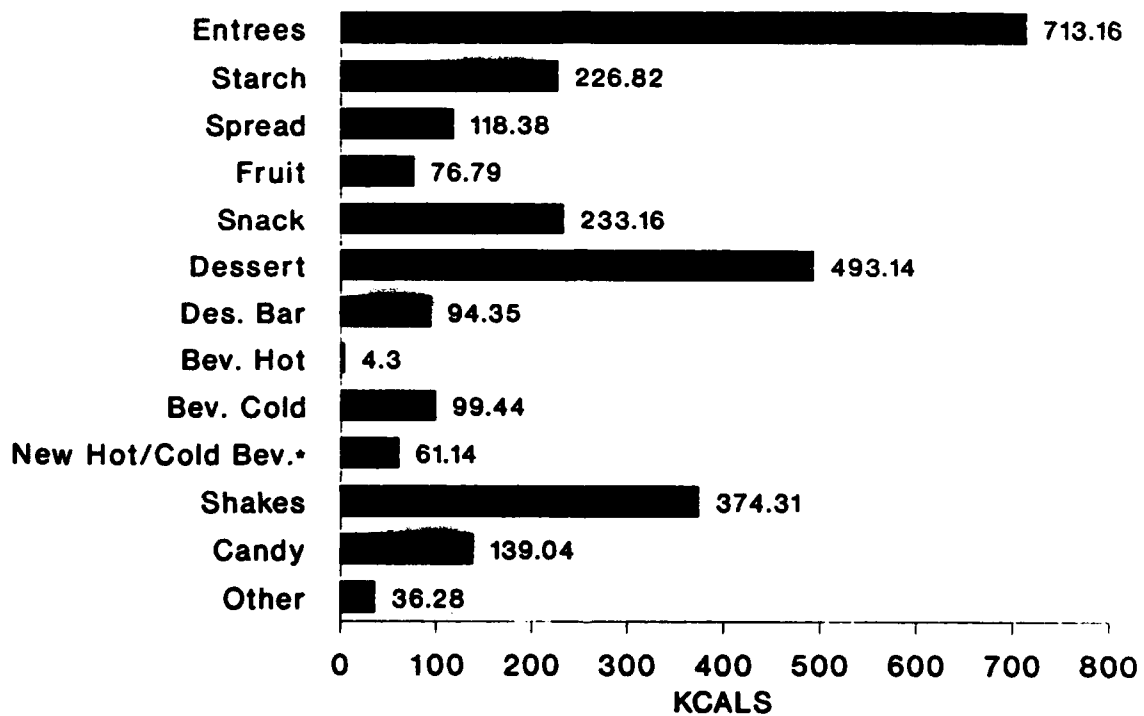
fig. does not include kcals consumed as
shakes, snacks, bars or new bev. mixes

Figure 2. Average Kcal Consumed Per Day by Food Group

and six other entrees: corned beef hash, chicken stew, omelet with ham, chicken a la king, beef stew and meatballs with rice and sauce. Additional analyses revealed that an overall group difference of approximately 100 kcals in favor of the SEP MRE group for entree consumption can be attributed to the six new SEP MRE ration entrees: Beef with Mushroom Gravy, Pork Chow Mein, Smoky Franks, Creamed Chipped Beef, Cheese Pizza and Beef and Cheese Pocket.

The SEP MRE group also preferentially consumed significantly more kcals in the form of desserts (mean \pm SD SEP MRE: 493 ± 187 ; MRE VIII: 384 ± 231) ($t(73) = 2.26$, $p < .03$) and candy (mean \pm SD SEP MRE: 139 ± 61 ; MRE VIII: 84 ± 57) ($t(73) = 4.03$, $p < .0001$) than the MRE VIII group. Kcal consumption in the form of fruit-flavored beverage bases, hot beverages, and spreads were higher in the MRE VIII group than the SEP MRE ration group.

The SEP MRE group had access to many additional items that were not offered in the MRE VIII ration (i.e., milk shakes, snacks and dessert bars). Figures 3 and 4 show the average kcal intake per day by food item for the SEP MRE and MRE VIII ration groups. The shakes and snacks accounted for approximately 23% of the daily kcal intake. Dessert bars and SEP's hot and cold beverages made up approximately 6% of the daily kcal intake. On average, the MRE VIII ration group consumed most of their kcals in the form of entrees (31%) and starches (27%). Caloric consumption for the SEP MRE group was more diversified, with major contributions coming from entrees (26.7%), starches (21.7%) and snacks (27.2%).



* lemon tea and apple cider mix

Figure 3. Average Kcal Consumed Per Day for SEP Group

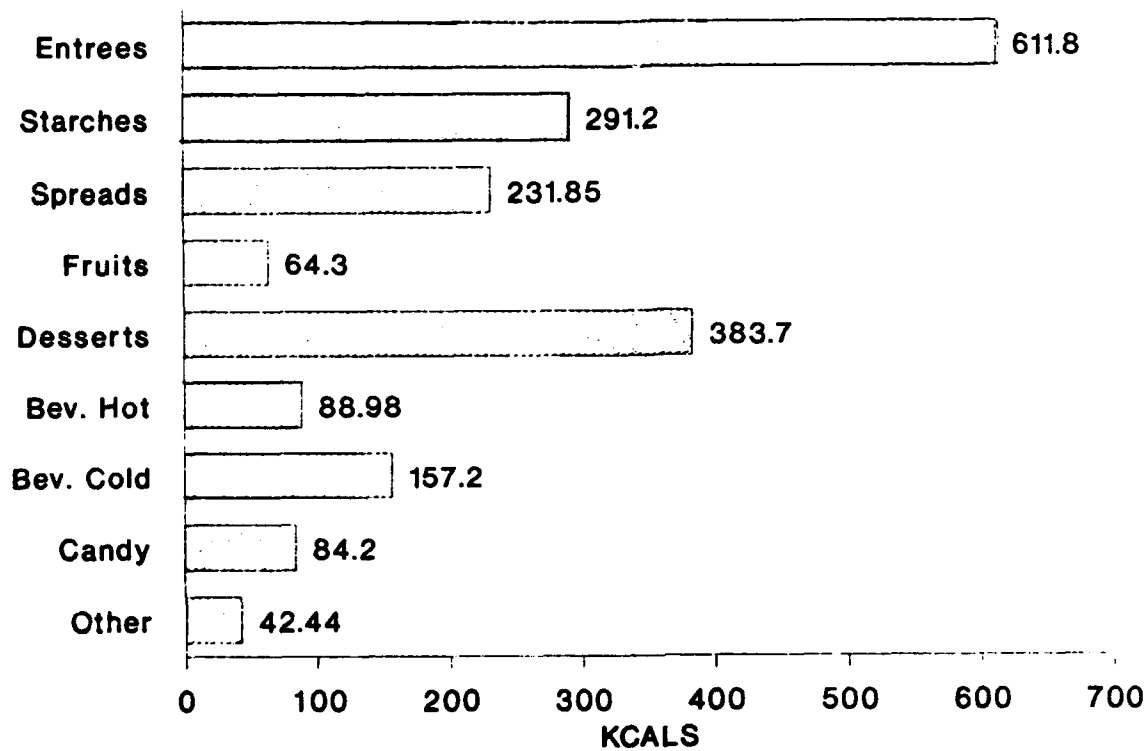


Figure 4. Average Kcal Consumed Per Day by Food Group for MRE VIII

Hydration Status

Hydration status reflects the balance between the amount of body water lost in sweat, urine, feces and expired air and the total amount of water consumed from food, plain water and other beverages. Urine specific gravity (USG) is a measure of the concentration of metabolites and other solutes in the urine, and is used as an indicator of hydration status. Hydration status was assessed on days 1, 2, 4, 6 and 7 by measuring urine specific gravity on first morning void urine samples.

Results of the mean daily USG are presented in Figure 5. Urine specific gravities above 1.030 are considered elevated, indicating that the individual is not optimally hydrated. Variations in USG below this criterion indicate changes in hydration status, but are considered within the normal range. Fully hydrated individuals have urine specific gravities in the range of 1.015 - 1.022. 11 There were no significant differences on any day between groups. Mean USG for the total period of the study was not significantly different between groups (1.026 for the SEP MRE group and 1.024 for the MRE VIII group); the mean values are slightly above normal ranges but not indicative of hypohydration.

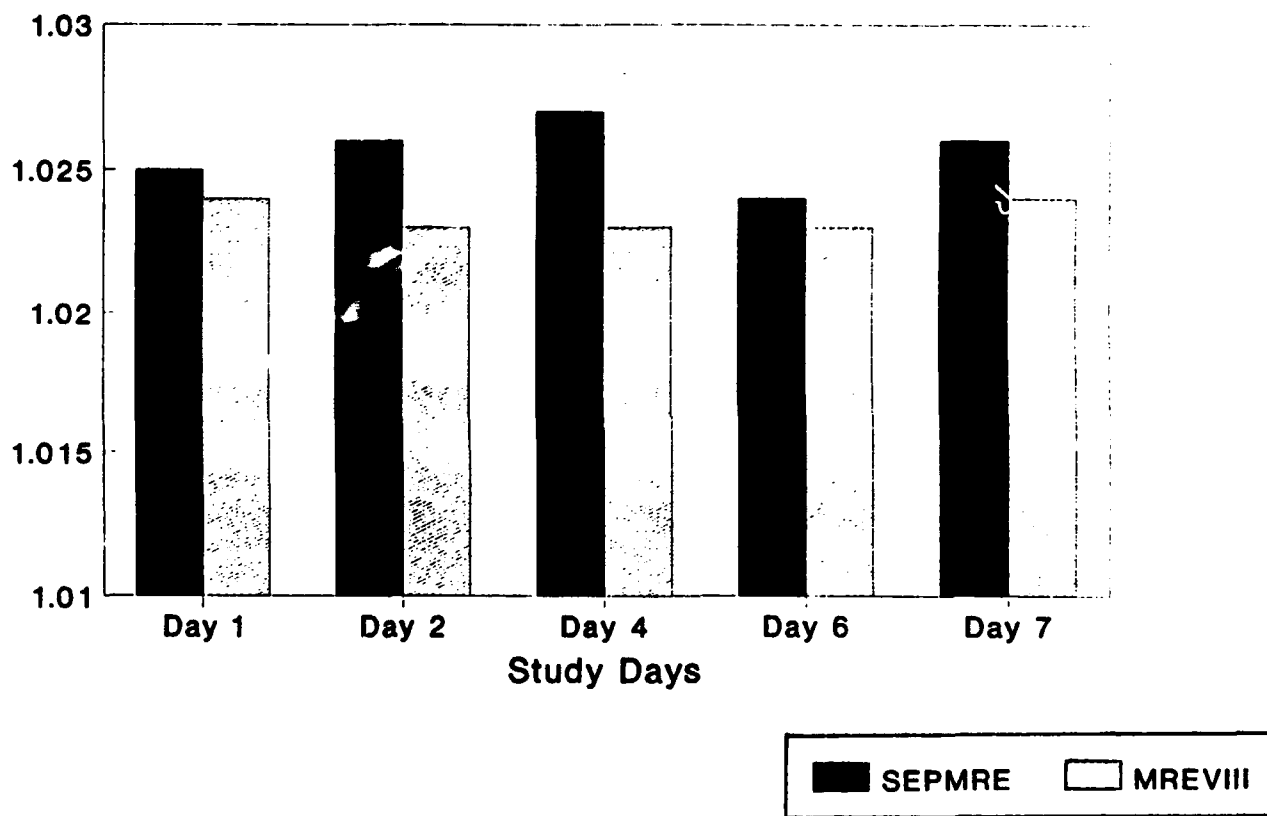


Figure 5. Urine Specific Gravity Across Days

Water Intake

Total water intake for each person is composed of intake from three sources: the water contained in the food, the water added to the food or beverage powders in the ration for purposes of rehydration and the amount of plain water consumed. Table 7 shows the average daily water intake from each source and the total water intake for the two groups.

Table 7. Daily mean (SD) water intake in the SEP MRE and MRE VIII groups.

WATER SOURCE	SEP MRE	MRE VIII	t	df
Food (mL)	433.3 (98.6)	432.0 (147.3)	ns	
Added to food (mL)	439.9 (293.3)	520.3 (614.9)	ns	
Drinking (mL)	3420.0 (1.6)	2565.0 (1.6)	2.43	73
Total (mL)	4370.0 (1.5)	3515.0 (1.9)	2.03	73

Note:

Only on Day 5 did SEP consume more drinking water than MRE; there was a difference of 15 mL, $t(73)=2.08$.

The SEP MRE group drank more plain water than the MRE VIII group. This is reflected by a greater total consumption of water by the SEP MRE group ($p<.05$). On average, subjects in the SEP MRE group ($n=73$) reported that it was “neither easy nor difficult” to obtain water while MRE VIII groups rated obtaining water to be “somewhat easy.” Five gallon cans were the most frequently used source for water in both the SEP MRE (77%) and MRE VIII (87%) groups. More subjects in the SEP MRE group obtained water from a water buffalo.

Food Acceptance

The mean acceptance ratings (1=dislike extremely, 5=neither like nor dislike, and 9=like extremely) of each item for the SEP MRE ration (Table 8) and the MRE VIII ration (Table 9) are based on responses to the final questionnaire and reflect acceptance of the items as rated at the end of the exercise.

Table 8. Final Questionnaire acceptance ratings for SEP MRE.

	Mean	SD
ENTREES		
Pork w/Rice, BBQ Sauce	5.5	2.3
Spaghetti, Meat Sauce	6.8	1.8
Ham Slices	7.2	1.8
Tuna w/Noodles	5.7	2.4
Chicken and Rice	6.9	2.1
Esc. Potatoes w/Ham	6.3	1.8
Beef w/Mushroom Gravy	6.1	2.1
Pork Chow Mein	6.7	2.4
Smokey Franks	7.6	1.8
Creamed Chipped Beef	5.9	2.7
Cheese Pizza	5.4	2.7
Beef and Cheese Pocket	6.6	2.4
STARCHES		
Crackers	6.1	2.3
Pouch Bread-White	7.2	1.9
Pouch Bread-Wheat	7.5	1.9
Biscuit	6.6	2.4
SPREADS		
Cheese Spread	7.3	1.7
FRUITS		
Peaches (dehydrated)	4.8	2.6
Pears (dehydrated)	4.7	2.6
Peaches (wet pack)	7.8	1.9
Pears (wet pack)	7.8	1.9

	Mean	SD
DESSERTS		
<i>Choc. Covered Cookie</i>	6.8	2.0
<i>Orange Pound Cake</i>	7.4	1.9
<i>Lemon Pound Cake</i>	7.9	1.4
<i>Pineapple Pound Cake</i>	7.8	1.7
<i>Vanilla Pound Cake</i>	8.0	1.5
<i>Chocolate Pound Cake</i>	7.5	1.9
<i>Almond Chew Bar</i>	4.2	2.7
<i>Orange Coconut Bar</i>	4.2	2.8
<i>Tropical Punch Chew Bar</i>	4.6	2.9
<i>Oatmeal Hermit Bar</i>	4.8	2.8
BEVERAGES		
<i>Coffee</i>	6.7	2.2
<i>Grape Beverage</i>	6.5	2.2
<i>Lemon-Lime Beverage</i>	6.5	2.1
<i>Cherry Beverage</i>	6.7	2.1
<i>Orange Beverage (Green)</i>	6.6	1.8
<i>Orange Beverage (White)</i>	6.8	1.9
<i>Apple Cider Mix</i>	6.7	2.2
<i>Lemon Tea Mix</i>	6.6	2.2
SHAKES		
<i>Vanilla Shake</i>	7.0	2.1
<i>Chocolate Shake</i>	6.6	2.3
<i>Strawberry Shake</i>	7.1	2.2
SNACKS		
<i>Cheese Curls</i>	7.5	1.8
<i>Chow Mein Noodles</i>	6.8	2.2
<i>Onion Rings</i>	6.0	2.6
<i>Pretzel Sticks</i>	6.8	2.2
<i>Tavern Nuts</i>	7.2	2.0
<i>Potato Sticks</i>	7.5	1.7
<i>Corn Chips</i>	7.4	1.7
CANDY		
<i>M&M</i>	8.1	1.4
<i>Caramel</i>	7.5	2.0
<i>Gum</i>	7.7	1.8
OTHER		
<i>Hot Sauce</i>	7.3	1.8
<i>Cream Substitute</i>	6.7	2.0
<i>Salt</i>	5.8	2.4

	Mean	SD
Sugar	6.8	1.9
<i>Ketchup</i>	6.7	2.2
<i>Mustard</i>	7.1	1.9
<i>Relish</i>	6.9	2.1

* New SEP items appear in italics

Of the 59 items in the SEP MRE ration, 81 % (n=48) of the items received a rating of 6.0 (liked slightly or better). Nineteen percent (n=11) of the SEP MRE ration items were rated less than 6.0. These less popular items included four entrees (pork with rice, tuna with noodles, creamed chipped beef, and pizza), two fruits (dehydrated peaches and pears) and all four varieties of dessert bars. The items in the SEP MRE ration which received the lowest ratings (i.e. ≤ 4.5 , dislike slightly) were the dessert chew bars and the dehydrated fruits.

Of the 42 major food items in the MRE VIII ration, 59% (n=25) of the items received ratings of 6.0 or greater; 41 % (n=17) of the items received ratings less than 6.0. These less popular items included seven entrees: pork with rice, tuna with noodles, escalloped potatoes with ham, corned beef hash, omelet with ham, chicken a la king, meatballs with rice, potato au gratin, peanut butter, all three varieties of dehydrated fruit and all of the desserts except for the chocolate-covered cookie and chocolate nut cake.

Table 9. Final Questionnaire acceptance ratings for MRE VIII.

	Mean	SD
ENTREES		
Pork w/Rice, BBQ Sauce	5.1	2.6
Spaghetti, Meat Sauce	6.7	2.2
Ham Slices	6.5	2.2
Tuna w/Noodles	5.1	2.6
Chicken and Rice	6.7	2.0
Esc. Potatoes w/Ham	5.9	2.4
Corned Beef Hash	5.8	2.2

	Mean	SD
Chicken Stew	6.1	2.0
Omelet w/Ham	5.7	2.6
Chicken ala King	4.7	2.5
Beef Stew	6.0	2.0
Meatballs, Rice and Sauce	5.0	2.8
STARCHES		
Crackers	6.2	1.8
Potato au Gratin	4.6	2.8
SPREADS		
Cheese Spread	6.9	2.2
Jelly	6.2	2.3
Peanut Butter	5.8	2.5
FRUITS		
Peaches	5.7	2.7
Pears	5.1	2.7
Applesauce	7.1	2.0
Fruit Mix	5.5	2.6
DESSERTS		
Choc. Covered Cookie	6.2	2.6
Brownies	4.2	2.7
Cherry Nut Cake	5.5	2.7
Maple Nut Cake	5.5	2.7
Oatmeal Cookie Bar	5.7	2.8
Chocolate Nut Cake	6.8	2.4
BEVERAGES		
Coffee	6.6	2.3
Cocoa	6.9	2.2
Grape Beverage	6.5	2.1
Lemon-Lime Beverage	6.3	2.2
Cherry Beverage	6.5	2.3
Orange Beverage	6.0	2.2
CANDY		
M&M	7.7	1.6
Caramel	7.1	2.1
Charms	7.0	2.2
Gum	6.7	2.4
Tootsie Roll	7.4	1.8
OTHER		
Hot Sauce	7.4	2.0

	Mean	SD
Cream Substitute	6.1	2.5
Sugar	6.5	2.3
Salt	5.8	2.4

Acceptance Ratings by Meal Component

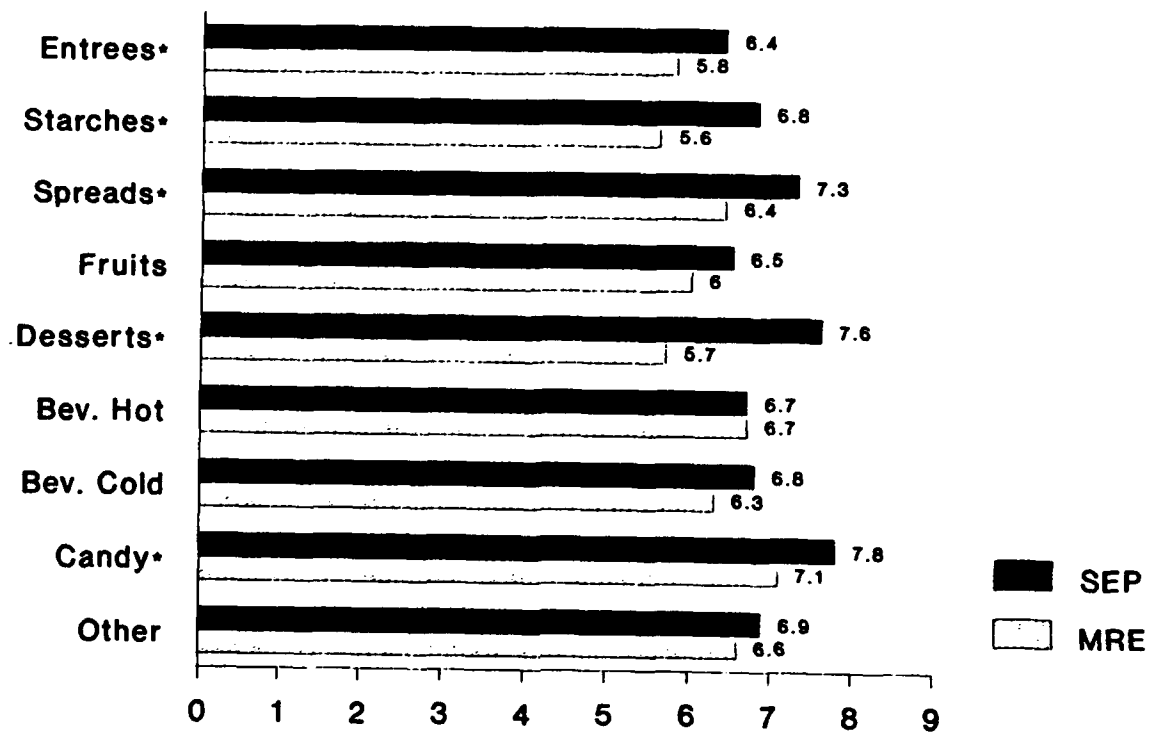
In general, the SEP MRE ration was rated more favorably across all food groups as shown in Table 10.

Table 10. Final Questionnaire mean (SD) acceptance ratings of major ration food groups.

	SEP MRE	MRE VIII	t	df
Entrees	6.4 (1.2)	5.8 (1.1)	3.50	165
Starches	6.8 (1.8)	5.6 (1.8)	4.74	163
Spreads	7.3 (1.7)	6.4 (1.7)	3.12	164
Fruits	6.5 (1.7)	6.0 (2.2)	ns	
Desserts	7.6 (1.4)	5.7 (1.8)	7.86	160
Beverage-Hot	6.7 (2.2)	6.7 (2.1)	ns	
Beverage-Cold	6.8 (1.7)	6.3 (2.1)	ns	
Candy	7.8 (1.4)	7.1 (1.6)	2.92	163
Other	6.9 (1.6)	6.6 (1.8)	ns	

Note: Includes all items.

Statistically, the highest ratings were noted in the SEP MRE group for the following meal components: entrees ($p<.001$), starches ($p<.0001$), spreads ($p<.002$), desserts ($p<.0001$) and candy ($p<.004$). This is presented graphically in Figure 6.



* significantly different

**Figure 6. Mean Ration Acceptability by Food Group
Final Questionnaire**

Table 11 lists the acceptance ratings of specific food items common to both SEP MRE and MRE VIII rations. Most common items were rated consistently higher by the SEP MRE group than the MRE VIII group, but these differences were generally not significant. Ham slices and gum were the only two common items rated significantly higher by the SEP MRE group.

Table 11. Final Questionnaire acceptance ratings of food items common to both SEP MRE and MRE VIII.

	SEP MRE	MRE VIII	t	df
Pork w/Rice, BBQ Sauce	5.5 (2.3)	5.1 (2.6)	ns	148
Spaghetti, Meat Sauce	6.8 (1.8)	6.7 (2.2)	ns	
Ham Slices	7.2 (1.8)	6.5 (2.2)	2.0	
Tuna w/Noodles	5.7 (2.4)	5.1 (2.5)	ns	
Chicken w/Rice	6.9 (2.1)	6.7 (2.0)	ns	
Esc. Potatoes w/Ham	6.3 (1.7)	5.9 (2.4)	ns	
Crackers	6.1 (2.3)	6.2 (1.8)	ns	
Cheese Spread	7.3 (1.7)	6.9 (2.2)	ns	
Peaches (dehydrated)	4.8 (2.6)	5.7 (2.7)	ns	
Pears (dehydrated)	4.7 (2.6)	5.1 (2.7)	ns	
Choc. Covered Cookie	6.8 (2.0)	6.2 (2.6)	ns	
Coffee	6.7 (2.2)	6.6 (2.3)	ns	
Grape Beverage	6.5 (2.2)	6.5 (2.1)	ns	
Lemon-Lime Beverage	6.5 (2.1)	6.3 (2.2)	ns	
Cherry Beverage	6.7 (2.1)	6.5 (2.3)	ns	
M&M	8.1 (1.4)	7.7 (1.6)	ns	156
Caramel	7.5 (2.0)	7.1 (2.1)	ns	
Gum	7.7 (1.8)	6.7 (2.4)	2.9	
Hot Sauce	7.3 (1.8)	7.4 (2.0)	ns	

Additional daily acceptance ratings were solicited in the field, when food was eaten, and, as in previous studies, the field acceptance ratings were higher than acceptance ratings based on the final questionnaire. All analyses and tables on field ratings can be found in Appendices L - P.

Evaluation of the Flameless Ration Heater

The Flameless Ration Heater (FRH) was distributed for use to both companies (SEP MRE and MRE VIII ration groups) along with a questionnaire (n=71) which asked the subjects to evaluate the FRH. The overall acceptability of the FRH was rated as "moderately to very good." Both groups reported that when the heaters were used, MRE rations reached warm to hot temperatures and taste ratings increased to "moderately" and "much better." The rate of heating MRE's was "slightly fast," and the ease of use was "moderately easy." Both groups felt that a "slight" problem in using the FRH was that it was "too hot to handle." When asked if anyone was burned while using the FRH, 10 subjects responded "yes," 9 of whom reported that their skin was sore for only a little while. More subjects in the MRE VIII group complained that a foul odor was produced during heating as compared to the SEP group. The main reason for not using a FRH was the lack of meal time provided by the mission. Otherwise, subjects reported they would "almost always" use a FRH if it were packaged with their MRE. If the FRH was not packaged with each meal, the subjects reported they would use the heaters whenever possible. Packaging of the FRH with each MRE was clearly preferred. When asked if they would save an unused FRH or throw it away, all of the subjects responded that they would save it.

For the most part, soldiers consuming the MRE VIII ration rated the FRH higher (in taste improvement, packaging, and overall acceptability), even though this group reported more problems with the heater compared to soldiers consuming the SEP MRE ration. There was a significant difference between groups in the reported temperature of the environment during meals ($t(37) = 3.50, p=.001$). The subjects in the MRE VIII group reported that the temperature varied during meal times between moderate and

cold, whereas the SEP MRE group reported temperatures to be between very and extremely cold.

Comments on the Ration

As part of the final questionnaire, troops were asked to list foods, drinks, or condiments they would like added or dropped from the SEP MRE and the MRE VIII. Of the soldiers receiving the SEP MRE ration, 56.2% (n=41) suggested that specific items should be dropped from the ration, the dessert chew bars were the most frequently requested item to be dropped and this is reflected in low acceptability ratings. Other unpopular items included creamed chipped beef and dehydrated fruits. A total of 49.3% (n=36) of the subjects suggested additions to the SEP MRE menu, the most frequently requested items were peanut butter and jelly (n=16) and hot cocoa mix (n=14). In the MRE VIII ration group, 62.8% of the subjects (n=59) suggested that various items be dropped from the MRE VIII menu. The most commonly requested items to be dropped included chicken a la king (23.4%), tuna and noodles (13.8%), dried fruit mix (12.8%) and brownies (13.8%). Roughly half of the subjects (48.9%, n=46) suggested specific foods to be added to the MRE VIII menu; hamburgers were the most commonly requested food (9.6%). Subjects also requested the addition of candy (6%), pizza (4.8%) and pepper (4.8%).

The MRE VIII group reported that time allotted for meals was 33.5 minutes on average, with a preferred time of 43.2 minutes. Time allotted for SEP MRE meals was reported to be at 28 minutes, with a preferred time of 38 minutes.

Portion size in both groups was generally adequate. Most ratings fell between "somewhat too small" and "just right". In general, the SEP MRE ration group rated

food portions served as slightly more adequate than the MRE VIII group.

Focus Group Responses

Toward the end of this field study, two focus groups met to discuss positive and negative impressions of the items, reactions to new items in the SEP MRE, opinions about the Flameless Ration Heater's effectiveness on heating the MRE VIIIs, impressions regarding the current packaging and new designs for outer pouches (i.e. Ziploc® package design). A total number of 27 soldiers (MRE VIII, n=12; SEP MRE, n=15) participated in the Focus Groups.

MRE VIII Group:

Foods recommended as additions to the MRE VIII ration were hot breakfast items, omelettes with bacon bits, and both white and wheat soft bread. Lunch and dinner items such as lasagna, tacos and burritos were also requested, as well as poundcakes. Assorted fruit punch, iced tea, lemonade and milkshakes were recommended for beverage additions.

SEP MRE Group:

Overall, the SEP MRE menu items were well-liked by the focus group participants. All items and acceptance ratings are presented in Appendix L. The most popular new SEP MRE foods were the smoky franks, the beef and cheese pockets, milkshakes (especially vanilla and strawberry) and poundcakes (especially lemon). The SEP MRE ration as a whole offered a greater variety of desserts, including five types of poundcakes, which were very popular. All of the dessert chew bars received very low acceptance ratings, and most subjects requested that the bars be dropped from the

ration.

Both the MRE VIII group and the SEP MRE group had similar responses to the following:

Both groups requested the combination of peanut butter with jelly, the addition of spices such as red pepper and mustard, and the elimination of salt. Both also suggested an increase in the variety as well as frequency of vegetable dishes such as broccoli, string beans and spinach, and suggested adding a more balanced menu according to the four food groups. Subjects noted that this would add to the variety of the ration and make each meal more filling.

Both the MRE VIII and the SEP MRE group thought the Flameless Ration Heater was definitely an asset to the meals. They were easy to use, had clear, understandable instructions and provided tasty, hot meals. All soldiers suggested including one of these heaters in every MRE, as well as a heat tab for coffee and cocoa.

All soldiers' responses to the new Ziploc® package designs were very favorable. They felt that the Ziploc® design would help them keep food sealed, and would allow them to save and store food that was unused. They liked the tear strip on the milkshake packages and requested this feature be added to all packages. Finally, many soldiers from both groups suggested the separation of food contents (i.e. meat from rice and vegetables) to make the MRE VIII more acceptable to vegetarians and personnel with other dietary restrictions. Low cholesterol foods were also recommended.

General Discussion

The findings of this study indicate that the SEP MRE is clearly superior to the MRE

VIII in terms of the acceptability of the food items. Overall, soldiers fed the SEP MRE rated 81% of the foods contained in that ration as "like slightly" or better. This represents a significant improvement over the 59% reported for the same criterion by soldiers fed the MRE VIII. Statistically higher acceptability ratings were reported for virtually all SEP MRE food groups (entrees, starches, spreads, desserts, and candies).

Of the six new entrees included in the SEP MRE, four of them (beef with mushroom gravy, beef & cheese pocket, pork chow mein, and smokey franks) received average ratings of at least "like slightly". The new cheese pizza entree was among the lowest rated (roughly neutral) entrees due, in part, to difficulty heating this item with the Flameless Ration Heaters. The three new starch items (two pouch breads and a biscuit) included in the SEP MRE were all well received, with both the white and wheat pouch breads rated as "like somewhat" or better. Wet pack fruits were clearly preferred over dehydrated fruits. All of the pound cakes introduced in the SEP MRE were rated positively. Five of the six cakes were rated as "like somewhat" or better. The chew bars were the only clear failure among the new SEP MRE items. All of these were given average ratings below neutral. Soldiers gave all three SEP MRE milkshakes ratings above neutral, but reported liking the vanilla and strawberry shakes better than the chocolate shake. Soldiers were pleased with all of the new snack items and reported about equal use of the snacks with meals and between meals. Of the fragile snack items, only the onion rings seemed to be damaged frequently. Satisfaction with the 29 new SEP items also seemed to generalize to the SEP MRE items that were common to the MRE VIII. Most of the items common to the two rations were rated consistently higher in terms of acceptability by the SEP MRE group than by the MRE VIII group.

In general, the greater satisfaction with the SEP MRE was also apparent in terms

of higher consumption of that ration relative to consumption of the MRE VIII. The average daily intake of soldiers in the SEP MRE group was 2670 kcals, whereas intake for the MRE VIII group averaged 1956 kcals. This difference is largely attributable to significantly greater consumption of SEP MRE desserts and candies and the additional calories provided by several of the new SEP items (entrees, milk shakes, and snacks). Indeed, the shakes and snacks included in the SEP MRE accounted for approximately 23% of the average daily total intake for that group. The MRE VIII did do a better job than the SEP MRE in terms of promoting consumption of spreads, hot beverages, and cold beverages (milk shakes are not included in this category). Many soldiers in the SEP MRE group commented that although the new items were very good, they still wanted the basics like peanut butter, jelly, and hot cocoa in virtually all menus.

Energy consumption from the SEP MRE was not significantly below the MRDA of 2800 kcals established for soldiers engaged in moderate activity in a temperate environment. However, soldiers subsisting on only the MRE VIII did not come close to meeting this guideline. In terms of consumption of available calories, neither group took full advantage of the rations. Soldiers in the SEP MRE group consumed approximately 67% of the available 3967 kcals whereas soldiers in the MRE VIII group consumed a meager 49% of the available 3945 kcals. Neither group met the MRDAs for consumption of protein and carbohydrate, although the SEP MRE group ate considerably more carbohydrate than did the MRE VIII group. Although tolerable according to MRDA guidelines, the percentage of calories (40.1%) taken in the form of fat was highest for the SEP MRE group. Given the extensive use of the MRE in the military and the growing awareness of the benefits of a low fat diet, additional gains in acceptance of the SEP MRE may be realized by reducing fat content. The quantities

of vitamins A, B6, and C and niacin consumed by the MRE VIII group were all at or above the MRDAs. The quantities of these substances consumed by the SEP MRE group were all below the MRDAs (vitamin C was not significantly lower) and were all significantly lower than the amounts consumed by soldiers in the MRE VIII group. These findings, as well as the previously mentioned comments by the soldiers, strongly suggest that inclusion of an item like the fortified MRE hot cocoa mix in the SEP MRE would be beneficial.

Under the conditions of the present study, neither weight loss nor dehydration became problematic for soldiers consuming the SEP MRE or for those consuming the MRE VIII. However, if the physical activity demands of the present study were increased, the remarkably low intake levels reported for soldiers in the MRE VIII group would surely be expected to bring weight loss above the acceptable 3% suggested by OTSG guidelines. The results of the present study suggest that soldiers fed the SEP MRE would be at lower risk. As in previous field studies of the MRE^{4,5,9} the data also indicate that additional measures (i.e. slightly longer meal times) are needed to enhance consumption. Soldiers presently do not take full advantage of the calories contained in their field rations, even when the calories are provided in the form of highly acceptable foods such as those introduced in the SEP MRE.

Conclusions and Recommendations

- The SEP MRE was clearly superior to the MRE VIII in terms of acceptability of the entrees, starches, spreads, desserts, and candies. Of the six new SEP entrees, five were liked at least "slightly." Smokey franks, a SEP item, received the highest average rating of any of the entrees in either ration. The new cheese pizza was the lowest rated SEP MRE entree due, in part, to difficulty heating this item.
- The SEP pouch breads, biscuits, pound cakes, shakes, and snacks were all well liked. Soldiers indicated that the addition of peanut butter and jelly would further improve the acceptability of the pouch breads. The chew bars included in the SEP MRE were disliked and should be reformulated or dropped from the ration.
- Average daily energy consumption from the SEP MRE (2670 kcals) was not significantly below the MRDA of 2800 kcals established for soldiers engaged in moderate activity in a temperate environment. However, soldiers subsisting on only the MRE VIII (1956 kcals) did not come close to meeting this guideline.
- Neither group of soldiers consumed sufficient calories in the form of protein or carbohydrate to reach the MRDAs for these macronutrients. Although tolerable according to MRDA guidelines, the percentage of calories (40.1%) taken in the form of fat was highest for the SEP MRE group. Given the extensive use of the MRE in the military and the growing awareness of the benefits of a low-fat diet, additional gains in acceptance of the SEP MRE may be realized by reducing fat content.
- Levels of vitamins A, B6, C and niacin consumed by the MRE VIII group were all at or above the MRDAs. The quantities of these substances consumed by the SEP MRE group were all below the MRDAs (vitamin C was not significantly lower) and were all significantly lower than the amounts consumed by soldiers in the MRE VIII group. This deficiency could be remedied by including fortified items like the MRE hot cocoa in future formulations of the SEP MRE.
- Weight loss and dehydration did not become problematic under the conditions of the present study. However, to ward off these hazards under more demanding conditions, steps should be taken to promote more complete usage of the foods and beverages provided in rations. On average, soldiers in the present study only consumed about half of the calories provided in the MRE VIII and about two-thirds of the calories provided in the SEP MRE. Inclusion of meatless entrees may promote consumption in those adhering to a vegetarian diet. Provision of Flameless Ration Heaters for all MRE meals and even slightly longer meal times, whenever possible, are two nonfood improvements that would be expected to enhance consumption.

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APPENDIX A. Flameless Ration Heater Instructions

MRE (MEAL, READY-TO-EAT) HEATER

↑
TEAR HERE TO USE BAG

WARNING

1. Vapors released by activated heater contain hydrogen, a flammable gas. Do not place an open flame in the vapor.
2. Vapors released by activated heater can displace oxygen. When ten or more heaters are used inside a vehicle or shelter, ensure the ventilation system is operating or a top hatch or door is open.
3. Hot water leakage can burn and cause a cold-weather injury. Use caution if carrying activated heater in pocket.
4. After heating, the heater bag and MRE pouch will be very hot. Use caution when removing MRE pouch from bag.
5. Discard heater and bag after use. Do not drink the water remaining in the bag or use it in food items.

HEATER AND ITS BYPRODUCTS ARE NOT INTENDED FOR HUMAN CONSUMPTION

OPERATING INSTRUCTIONS

SPECIAL INSTRUCTIONS FOR FROZEN MRE:

- Use two heaters: one to thaw, one to heat
- To thaw frozen MRE: Follow instructions below except, add water to bag before adding MRE. When heater begins to feel warm, add MRE to bag.
- To heat thawed MRE: Follow instructions below.
- In cold weather, heater can be placed in BDU pocket to heat MRE. Make sure folded end of bag is up to prevent water from leaking out.

- 1 Remove MRE pouch from carton and save carton.
- 2 Tear off top of bag. Place MRE pouch in bag with heater.
- 3 While holding MRE pouch and heater above lines on bag, pour water into bag until it reaches a level between lines. Slide heater and MRE to bottom of bag, and fold top of bag to side opposite heater.

FILL TO LINES
(DO NOT OVERFILL)
- 4 With heater UNDERNEATH MRE, hold bag level for a minute to let heater soak up water.
- 5 Stuff assembly into carton with top of bag folded over top of MRE and heater underneath.
- 6 To prevent water from escaping and to maximize heat output, always keep:
 - HEATER located UNDERNEATH MRE;
 - BAG folded OVER TOP of MRE; and
 - CARTON INCLINED, with FOLDED END of bag UP.

After ten to fifteen minutes (depending on air temperature) top half of bag can be torn off and the MRE can be removed and eaten.

↑
TEAR HERE TO REMOVE MRE

Knead MRE to ensure uniform temperature. CAUTION: The contents will be HOT.

APPENDIX B. Volunteer Agreement Form

VOLUNTEER AGREEMENT AFFIDAVIT

For use of this form, see AR 70-25, the proponent agency is OTSG

PRIVACY ACT OF 1974

Authority: 16 USC 3013, 44 USC 3101, and 10 USC 1071-1087

Principal Purpose: To document voluntary participation in the Clinical Investigation and Research Program. SSN and home address will be used for identification and locating purposes.

Routine Uses: The SSN and home address will be used for identification and locating purposes. Information derived from the study will be used to document the study, implementation of medical programs, adjudication of claims, and for the mandatory reporting of medical conditions as required by law. Information may be furnished to Federal, State and local agencies.

Disclosure: The furnishing of your SSN and home address is mandatory and necessary to provide identification and to contact you if future information indicates that your health may be adversely affected. Failure to provide the information may preclude your voluntary participation in this investigational study.

PART A(1) - VOLUNTEER AFFIDAVIT

Volunteer Subjects in Approved Department of the Army Research Studies

Volunteers under the provisions of AR 40-36 and AR 70-25 are authorized all necessary medical care for injury or disease which is the proximate result of their participation in such studies.

I, _____, SSN _____,

having full capacity to consent and having attained my _____ birthday, do hereby volunteer/give consent as legal representative for _____ to participate in _____

Nutritional and Hedonic Consequences of Consuming the MRE VIII or the SEP MRE

(Research study)

under the direction of Dr. Laurie S. Lester

conducted at Pohakuloa Training Area

(Name of Institution)

The implications of my voluntary participation/consent as legal representative; duration and purpose of the research study, the methods and means by which it is to be conducted; and the inconveniences and hazards that may reasonably be expected have been explained to me by

Dr. Laurie S. Lester 508-651-4321

Contact telephone(s):

I have been given an opportunity to ask questions concerning this investigational study. Any such questions were answered to my full and complete satisfaction. Should any further questions arise concerning my rights/the rights of the person I represent on study-related injury, I may contact

Office of Chief Counsel

at US Army Natick Research, Development and Engineering Center (508)651-4322

(Name, Address and Phone Number of Hospital (Include Area Code))

I understand that I may at any time during the course of this study revoke my consent and withdraw/have the person I represent withdrawn from the study without further penalty or loss of benefits; however, if the person I represent may be required (military volunteer) or requested (civilian volunteer) to undergo certain examination if, in the opinion of the attending physician, such examinations are necessary for my/the person I represent's health and well-being. My/the person I represent's refusal to participate will involve no penalty or loss of benefits to which I am/the person I represent is otherwise entitled.

PART A (2) - ASSENT VOLUNTEER AFFIDAVIT (MINOR CHILD)

I, _____, SSN _____, having full capacity to consent and having attained my _____ birthday, do hereby volunteer for _____

to participate in _____

(Research Study)

under the direction of _____

conducted at _____

(Name of Institution)

50

(Continue on Reverse)

PART A(2) - ASSENT VOLUNTEER AFFIDAVIT (MINOR CHILD) (Cont'd.)

The implications of my voluntary participation, the nature, duration and purpose of the research study, the methods and means by which it is to be conducted, and the inconveniences and hazards that may reasonably be expected have been explained to me by

I have been given an opportunity to ask questions concerning this investigational study. Any such questions were answered to my full and complete satisfaction. Should any further questions arise concerning my rights I may contact

at

(Name, Address, and Phone Number of Hospital/Institute Area Contact)

I understand that I may at any time during the course of this study revoke my assent and withdraw from the study without further penalty or loss of benefits; however, I may be requested to undergo certain examination if, in the opinion of the attending physician, such examinations are necessary for my health and well-being. My refusal to participate will involve no penalty or loss of benefits to which I am otherwise entitled.

PART B - TO BE COMPLETED BY INVESTIGATOR

INSTRUCTIONS FOR ELEMENTS OF INFORMED CONSENT (Provide a detailed explanation in accordance with Appendix E, AR 40-38 or AR 70-25.)

The purpose of this study is to evaluate the Meal Ready to Eat, (MRE) VIII and the Soldier Enhancement Program (SEP) MRE. This evaluation is necessary to determine whether changes that have been made to improve the ration lead soldiers to eat more of the ration and be more satisfied with the food. This ration test will require you to eat one of the versions of this ration without any supplement or any other food items for 7 consecutive days during an FTX conducted by your unit at Pohakuloa Training Area, HI.

The test will focus on the food you are eating. We will ask some of you (40/Company) to maintain a record of which foods you eat, how much you eat of them and how much you like individual food items. Those of you maintaining records will also be weighed prior to the field test and on several days during the test to determine if you are eating enough to maintain your body weight. For this weighing, you should remove your gear, equipment, and BDU shirts just before getting on the scale.

If you are one of these 40 volunteers, we will also ask you to record how much water you drink and on several days we will collect a urine sample. On the evening before the urine test, we will provide you with a small plastic bottle. When you wake in the morning you should fill the bottle with your first urination of the day. The water consumption data and the urine samples

I ☐ do ☐ do not (check one & initial) consent to the inclusion of this form in my outpatient medical treatment record.

SIGNATURE OF VOLUNTEER	DATE	SIGNATURE OF LEGAL GUARDIAN (if volunteer is a minor)
PERMANENT ADDRESS OF VOLUNTEER	TYPED NAME OF WITNESS	
	SIGNATURE OF WITNESS	DATE

REVERSE OF DA FORM 5303-R, MAY 88

will be used to determine if you are getting enough to drink and whether you are dehydrated. In total, it will take you about 15 minutes a day to provide the information needed for this study.

Sometime toward the end of the study, we will ask for 10 volunteers/Company to provide verbal comments on the food through participation in a one hour focus group (discussion group). At the end of the study, everyone will be asked to take about half an hour to fill out a final questionnaire about the ration. This information will allow us to evaluate which version of the ration is most satisfying to the consumer in terms of taste, variety, portion size, ease of use, etc.

All testing procedures and safety limitations conform to the USARIEM Type Protocol. This study is judged to involve no more than minimal risk to the participating subjects.

This study should produce little additional discomfort for you beyond whatever you would normally encounter during scheduled field exercises. Although this study will have no direct benefit for you, your participation will provide important information on improving the MRE. You have the right to withdraw from the study at any time, however this will not end your participation in the field exercise or change your access to field dining facilities or rations. You will receive a copy of this consent form and you are encouraged to ask any questions you may have.

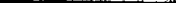
You may request to see your own results or you may request to see the final report of the study. All data obtained about you as an individual will be considered privileged and held in confidence. You will not be identified in any presentation of the results. Complete confidentiality cannot be promised because information bearing on your health may be required to be reported to appropriate medical or command authorities, and the applicable regulation "notes the possibility that the US Army Medical Research and Command Officials may inspect the records."

Thank you for your help.

SIGNATURE OF VOLUNTEER	DATE SIGNED	SIGNATURE OF LEGAL GUARDIAN (if volunteer is a minor)
PERMANENT ADDRESS OF VOLUNTEER	TYPED OR PRINTED NAME AND SIGNATURE OF WITNESS	DATE SIGNED

APPENDIX C. Background Questionnaires

MRE VIII



Proper Mark

- ☐ 1. American Indian/Alaskan Native
- ☐ 2. Asian/Pacific Islander
- ☐ 3. Black
- ☐ 4. Hispanic
- ☐ 5. White, not of Hispanic origin
- ☐ 6. Other (please specify) _____

DO NOT WRITE BELOW THIS LINE

[illegible]

12. In what part of the country did you live the longest before age 16? (fill in appropriate circle)

- ☐ 1. New England (ME, NH, VT, MA, CT, RI)
☐ 2. Middle Atlantic (NJ, NY, PA)
☐ 3. South Atlantic (DE, MD, VA, WV, NC, SC, GA, FL, DC)
☐ 4. North Central (OH, IN, IL, MI, WI, MN, IA, MO, ND, SD, NE, KS)
☐ 5. South Central (KY, TN, AL, MS, AR, LA, OK, TX)
☐ 6. Mountain (ID, WY, CO, MT, AZ, NM, UT, NV)
☐ 7. Pacific (WA, OR, CA, AK, HI)
☐ 8. Other (please specify) _____

13. Do you have any food allergies or avoid any food due to medical or personal reasons? ☐ YES ☐ NO

If YES, please list the foods and why you avoid them: _____

MRE EVALUATION Background Information

SEP MRE

Please answer the following questions for our records. All of the information you provide will be kept confidential. This information is necessary in order to provide a combat ration that will meet everyone's needs. Thank you!



Proper Mark

1. Your name: _____
2. Last four digits of your Social Security Number: _____
3. What is your rank: E-_____ W-_____ O-_____
4. Your Company: _____ Platoon: _____
5. What is your gender? ☐ Male ☐ Female
6. What was your age at your last birthday? _____
7. How long have you been in the Army? _____ years _____ months
8. What is your height? _____ ft _____ in
What is your weight? _____ lbs
9. Are you currently trying to lose weight? ☐ YES ☐ NO
10. Are you currently trying to gain weight? ☐ YES ☐ NO
11. Which ethnic group do you belong to? (fill in appropriate circle)

- ☐ 1. American Indian/Alaskan Native
- ☐ 2. Asian/Pacific Islander
- ☐ 3. Black
- ☐ 4. Hispanic
- ☐ 5. White, not of Hispanic origin
- ☐ 6. Other (please specify) _____

DO NOT WRITE BELOW THIS LINE

GROUP ☐ A ☐ B

SUBJ									
0	1	2	3	4	5	6	7	8	9

E									
1	2	3	4	5	6	7	8	9	

C									
0	1	2	3	4	5	6	7	8	9

AGE									
0	1	2	3	4	5	6	7	8	9

YEAR									
0	1	2	3	4	5	6	7	8	9

MONTH									

FT									
0	1	2	3	4	5	6	7	8	9
IN									
0	1	2	3	4	5	6	7	8	9
WT									
0	1	2	3	4	5	6	7	8	9
11.									
0	1	2	3	4	5	6	7	8	9

-

☐ YES

ONC

(Question 14 continued)

NEVER TRIED	DISLIKE EXTREMELY	DISLIKE VERY MUCH	DISLIKE MODERATELY	DISLIKE SLIGHTLY	NEITHER LIKE NOR DISLIKE	LIKE SLIGHTLY	LIKE MODERATELY	LIKE VERY MUCH	LIKE EXTREMELY
0	1	2	3	4	5	6	7	8	9

22. Almond Chew Bar
23. Orange Coconut Bar
24. Tropical Punch Chew Bar
25. Oatmeal Hermit Bar
26. Chocolate Shake
27. Vanilla Shake
28. Strawberry Shake
29. Apple Cider
30. Iced Tea

0	1	2	3	4	5	6	7	8	9
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. How much would you expect to like/dislike each of the following items if they were included in your MRE? Use the scale below to fill in the bubble under the number of your choice.

DISLIKE EXTREMELY	DISLIKE VERY MUCH	DISLIKE MODERATELY	DISLIKE SLIGHTLY	NEITHER LIKE NOR DISLIKE	LIKE SLIGHTLY	LIKE MODERATELY	LIKE VERY MUCH	LIKE EXTREMELY
1	2	3	4	5	6	7	8	9

1. Beef and Mushroom Gravy
2. Pork Chow Mein
3. Smokey Franks
4. Creamed Chipped Beef
5. Cheese Pizza
6. Beef and Cheese Pocket (Burrito)
7. White Bread
8. Wheat Bread
9. Peaches in Syrup
10. Pears in Syrup
11. Cheese Curds
12. Chow Mein Noodles
13. Onion Rings
14. Pretzel Sticks
15. Tavern Nuts
16. Potato Sticks
17. Corn Chips
18. Orange Pound Cake
19. Lemon Pound Cake
20. Vanilla Pound Cake
21. Chocolate Pound Cake

1	2	3	4	5	6	7	8	9
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(Question 15 continued)



DISLIKE EXTREMELY	DISLIKE VERY MUCH	DISLIKE MODERATELY	DISLIKE SLIGHTLY	NEITHER LIKE NOR DISLIKE	LIKE SLIGHTLY	LIKE MODERATELY	LIKE VERY MUCH	LIKE EXTREMELY
1	2	3	4	5	6	7	8	9

- 22. Almond Chew Bar
- 23. Orange Coconut Bar
- 24. Tropical Punch Chew Bar
- 25. Oatmeal Hermit Bar
- 26. Chocolate Shake
- 27. Vanilla Shake
- 28. Strawberry Shake
- 29. Apple Cider
- 30. Iced Tea

1	2	3	4	5	6	7	8	9
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Considering any and all past experience you have had with eating MREs, how much do you like/dislike the MREs? Fill in the bubble corresponding to your answer.

DISLIKE EXTREMELY	DISLIKE VERY MUCH	DISLIKE MODERATELY	DISLIKE SLIGHTLY	NEITHER LIKE NOR DISLIKE	LIKE SLIGHTLY	LIKE MODERATELY	LIKE VERY MUCH	LIKE EXTREMELY
1	2	3	4	5	6	7	8	9
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. Considering any and all past experience you have had with military food (field, garrison, etc.), how much do you like/dislike military food? Fill in the bubble corresponding to your answer.

DISLIKE EXTREMELY	DISLIKE VERY MUCH	DISLIKE MODERATELY	DISLIKE SLIGHTLY	NEITHER LIKE NOR DISLIKE	LIKE SLIGHTLY	LIKE MODERATELY	LIKE VERY MUCH	LIKE EXTREMELY
1	2	3	4	5	6	7	8	9
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX D. MRE Intake Records

MRE INTAKE RECORD

NAME: _____ ID: _____ DATE: _____

FOOD TYPE	CODE	FOOD ITEM (Circle One)	AMOUNT EATEN	WHEN EATEN (Military Time)	WATER ADDED (Canteen Cups)										DID YOU HEAT THE ITEM?	HOW DID YOU HEAT THE ITEM?	
						DISLIKE EXTREMELY	DISLIKE VERY MUCH	DISLIKE MODERATELY	DISLIKE SLIGHTLY	NEITHER LIKE/Dislike	LIKE SLIGHTLY	LIKE MODERATELY	LIKE VERY MUCH	LIKE EXTREMELY			
ENTREE	00	Pork w/Rice, BBQ Sae	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	01	Spaghetti w/Meat Sauce	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	02	Ham Slices	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	03	Tuna with Noodles	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	04	Chicken & Rice	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	05	Esc. Potato w/Ham	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	06	Corned Beef Hash	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	07	Chicken Stew	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	08	Omelet with Ham	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	09	Chicken a la King	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	10	Beef Stew	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	11	Meatballs, Rice & Sae	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
STARCH	16	Crackers	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____
	17	Potatoes au Gratin	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
SPREAD	22	Cheese Spread	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____
	23	Jelly	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____
	24	Peanut Butter	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____
FRUIT	29	Peaches	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	30	Pears	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	31	Applesauce	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	32	Fruit Mix	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	33	Strawberries	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
DESSERT	38	Choc. Covered Cookie	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____
	39	Brownies	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____
	40	Cherry Nut Cake	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____
	41	Maple Nut Cake	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____
	42	Oatmeal Cookie Bar	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____
	43	Chocolate Nut Cake	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____
BEVERAGE	48	Coffee	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	49	Grape Beverage	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	50	Lemon-Lime Beverage	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	51	Cherry Beverage	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	52	Orange Beverage	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
	53	Cocoa	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____
OTHER	58	M & M's	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9			_____
	59	Caramels	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9			_____
	60	Charms	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9			_____
	61	Gum	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9			_____
	62	Hot Sauce	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9			_____
	63	Cream Substitute	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9			_____
	64	Sugar	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9			_____
	65	Salt	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9			_____

Use the scale below to rate the following <u>before</u> each MRE meal?					How many people did you eat each MRE meal with? Please write in a number.				
1	2	3	4	5	6	7	8	9	
NOT AT ALL					EXTREMELY				
MEAL	WHEN EATEN	HUNGRY	FULL	THIRSTY					
1	_____	_____	_____	_____					
2	_____	_____	_____	_____					
3	_____	_____	_____	_____					
4	_____	_____	_____	_____					

MEAL 1 _____ MEAL 2 _____ MEAL 3 _____ MEAL 4 _____				
Were these friends or other men in your company?				
1	2	3	4	5
ALL FRIENDS	1/2 FRIENDS		ALL OTHER	
MEAL				
1	_____			
2	_____			
3	_____			
4	_____			

Please estimate the number of quarts of PLAIN water you drank during each time period listed below. If you drank more than 2 quarts of water during any one period, write in the total amount on the line provided.

Time Periods	Amount of water (portions of a quart)									
During Breakfast	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____
Between Breakfast and lunch	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____
During Lunch	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____
Between Lunch and Dinner	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____
During Dinner	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____
Between Dinner and Breakfast	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____

What was your activity level today? (Circle one)

LIGHT
1

MODERATE
3

HEAVY
5

SEP MRE INTAKE RECORD

NAME: _____ ID: _____ DATE: _____

FOOD TYPE	CODE	FOOD ITEM (Circle One)	AMOUNT EATEN	WHEN EATEN (Military Time)	WATER ADDED (Canteen Cups)										DID YOU HEAT THE ITEM?		HOW DID YOU HEAT THE ITEM?	
						DISLIKE EXTREMELY	DISLIKE VERY MUCH	DISLIKE MODERATELY	DISLIKE SLIGHTLY	NEITHER LIKE NOR DISLIKE	LIKE SLIGHTLY	LIKE MODERATELY	LIKE VERY MUCH	LIKE EXTREMELY				
ENTREE	00	Pork w/Rice, BBQ Sae	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	01	Spaghetti w/ Meat Sauce	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	02	Ham Slices	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	03	Tuna with Noodles	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	04	Chicken & Rice	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	05	Esc. Potato w/Ham	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	06	Beef & Mushroom Gravy	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	07	Pork Chow Mein	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	08	Smokey Franks	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	09	Creamed Chipped Beef	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	10	Cheese Pizza	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	11	Beef and Cheese Pocket	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
STARCH	16	Crackers	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	17	Pouch Bread - White	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	18	Pouch Bread - Wheat	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	19	Biscuit	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
SPREAD	25	Cheese Spread	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
FRUIT	32	Peaches (Dehydrated)	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	33	Pears (Dehydrated)	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	34	Peaches (Wet Pack)	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	35	Pears (Wet Pack)	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
SNACK	40	Cheese Curls	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	41	Chow Mein Noodles	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	42	Onion Rings	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	43	Pretzel Sticks	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	44	Tavern Nuts	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	45	Potato Sticks	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	46	Corn Chips	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
DESSERT	51	Choc. Covered Cookie	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	52	Orange Pound Cake	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	53	Lemon Pound Cake	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	54	Pineapple Pound Cake	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	55	Vanilla Pound Cake	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	56	Chocolate Pound Cake	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	57	Almond Chew Bar	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	58	Orange Coconut Bar	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	59	Tropical Punch Chew Bar	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	60	Oatmeal Hermit Bar	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
BEVERAGE	65	Coffee	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	66	Grape Beverage	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	67	Lemon-Lime Beverage	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	68	Cherry Beverage	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	69	Orange Beverage (Green)	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	70	Orange Beverage (White)	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	71	Apple Cider Mix	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	72	Lemon Tea Mix	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	73	Vanilla Shake	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	74	Chocolate Shake	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____
	75	Strawberry Shake	0 1/4 1/2 3/4 1 or	_____	_____	1	2	3	4	5	6	7	8	9	YES	NO	_____	_____

FOOD TYPE	CODE	FOOD ITEM (Circle One)	AMOUNT EATEN	WHEN EATEN (Military Time)	WATER ADDED (Canteen Cups)	DOES EXTREMELY LITTLE VERY MUCH	DOES MODERATELY LITTLE VERY MUCH	DOES SLIGHTLY LITTLE VERY MUCH	DOES SLIGHTLY LITTLE VERY MUCH	DOES MODERATELY LITTLE VERY MUCH	DOES EXTREMELY LITTLE VERY MUCH			
OTHER	80	M & M's	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9
	81	Caramel	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9
	82	Gum	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9
	83	Hot Sauce	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9
	84	Cream Substitute	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9
	85	Sugar	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9
	86	Salt	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9
	87	Ketchup	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9
	88	Mustard	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9
	89	Relish	0 1/4 1/2 3/4 1 or	_____	NA	1	2	3	4	5	6	7	8	9

Use the scale below to rate the following <u>before</u> each MRE meal? <div style="display: flex; justify-content: space-around;"> 123456789 </div> <div style="display: flex; justify-content: space-between;"> NOT AT ALL EXTREMELY </div> <div style="display: flex; justify-content: space-around;"> WHEN EATEN HUNGRY FULL THIRSTY </div> <table> <tr><td>MEAL 1</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> </table>					MEAL 1	_____	_____	_____	_____	2	_____	_____	_____	_____	3	_____	_____	_____	_____	4	_____	_____	_____	_____	How many people did you eat each MRE meal with? Please write in a number. MEAL 1 _____ MEAL 2 _____ MEAL 3 _____ MEAL 4 _____ Were these friends or other men in your company? <div style="display: flex; justify-content: space-around;"> 12345 </div> <div style="display: flex; justify-content: space-between;"> ALL FRIENDS 1/2 FRIENDS ALL OTHER </div> <table> <tr><td>MEAL 1</td><td>_____</td></tr> <tr><td>2</td><td>_____</td></tr> <tr><td>3</td><td>_____</td></tr> <tr><td>4</td><td>_____</td></tr> </table>					MEAL 1	_____	2	_____	3	_____	4	_____
MEAL 1	_____	_____	_____	_____																																	
2	_____	_____	_____	_____																																	
3	_____	_____	_____	_____																																	
4	_____	_____	_____	_____																																	
MEAL 1	_____																																				
2	_____																																				
3	_____																																				
4	_____																																				

Please estimate the number of quarts of PLAIN water you drank during each time period listed below. If you drank more than 2 quarts of water during any one period, write in the total amount on the line provided.

Time Periods	Amount of water (portions of a quart)									
During Breakfast	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____
Between Breakfast and lunch	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____
During Lunch	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____
Between Lunch and Dinner	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____
During Dinner	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____
Between Dinner and Breakfast	0	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	or _____

What was your activity level today? (Circle one)

LIGHT
1

2

MODERATE
3

4

HEAVY
5

APPENDIX E. Nutrient Information for the MRE VIII

RECORD OF NUTRITIVE VALUES MRE VIII

10/31/88

TOTALS	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
1	256.96	45.51	46.80	8.51	466	659	6.58	1337	1665	120	3.14	4.75	79
2	173.24	46.08	40.91	7.87	421	593	6.50	1487	1319	122	3.38	7.35	105
3	178.53	45.34	50.89	8.87	483	817	4.64	1354	1854	185	2.85	2.43	43
4	263.19	47.81	64.18	11.57	688	1372	5.70	2550	1421	130	4.97	2.20	406
5	204.88	43.39	55.02	9.18	600	696	6.66	2067	1012	108	4.55	3.17	98
6	174.76	53.34	50.37	9.00	445	715	4.97	1603	1548	170	3.21	2.27	84
7	188.91	57.03	55.90	8.37	413	579	6.92	1773	1219	160	3.89	.90	138
8	211.02	44.13	45.92	10.82	515	1125	5.29	2457	1524	128	5.13	2.88	107
9	149.96	55.96	56.60	9.54	413	644	7.86	1922	1484	172	4.35	7.38	66
10	206.50	51.48	56.11	6.90	548	716	5.27	1538	624	106	3.01	.90	111
11	186.66	49.87	53.42	7.98	559	774	5.46	1861	980	106	3.69	2.85	130
12	290.45	38.09	41.63	8.72	435	757	5.51	1714	1498	127	3.62	2.82	66
MEAN	207.09	48.17	51.48	8.94	499	787	5.95	1805	1346	136	3.82	3.32	119

MEAL REQUIREMENTS

1/3 AR 40-25	33.33	53.3	267	267	6.0	1667-2334	625-1825	133	5.0
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68

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHO (G)	CALORIES	WEIGHT (G)
1	2930	.004	2940	91	2.55	1.10	10.5	1.84	47	.86	4.14	199.40	1401	557
2	3070	.014	3100	91	2.38	.96	9.8	1.86	85	1.09	4.03	186.08	1297	454
3	4630	2.007	7980	165	3.22	.98	18.7	1.84	122	1.09	3.92	176.73	1346	480
4	6910	.058	7010	116	3.51	1.32	8.8	3.16	84	.92	5.24	151.66	1375	538
5	2910	.578	3870	69	2.17	1.10	10.5	2.08	61	.79	6.41	143.35	1242	456
6	4630	.234	5020	135	3.21	1.01	16.5	1.77	71	.86	3.55	131.09	1191	419
7	1710	1.267	3820	78	2.03	1.01	12.9	.75	74	1.70	6.74	145.82	1314	456
8	3800	.055	3900	91	3.02	1.15	10.4	2.08	25	.76	4.33	162.07	1238	473
9	2200	.023	2240	152	2.38	.98	16.2	.99	72	1.02	8.80	146.30	1318	418
10	3510	.000	3510	67	2.19	.92	11.9	2.01	55	.56	5.96	129.84	1230	451
11	3400	.059	3500	113	2.47	1.00	17.3	2.44	115	.33	3.55	157.42	1310	455
12	3660	.004	3670	92	3.07	1.06	11.5	2.19	61	.63	3.44	186.29	1272	565
MEAN	3613	.359	4213	105	2.69	1.05	12.9	1.91	73	.88	5.01	159.67	1295	475

MEAL REQUIREMENTS

1/3 AR 40-25	1670	20	0.60	0.73	8.0(N.E.)	0.73	133	1.0	3.3	146.7	1200
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PERCENT OF CALORIES FROM: PROTEIN - 15 PERCENT
FAT - 36 PERCENT
CHO - 49 PERCENT

RECORD OF NUTRITIVE VALUES 'MRE VIII

10/31/88

MENU 1	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
PORK BBO/RCE	143.68	32.27	25.13	3.81	39	288	3.67	828	796	48	2.06	4.54	79
APPLESAUCE	100.27	.23	.23	.18	5	9	.44	4	77	4		.05	
JELLY	9.70	.26	.05	.05	2	3	.11	13	11	2	.01		
CRACKERS UST	4.43	5.58		1.29	261	52	.72	184	72	12	.44		
CANDY AVER	.77	2.65	4.79	.49	44	41	.44	74	67	11	.16	.16	
COCOA BEV PD	1.10	2.80	6.95	1.99	67	196	.81	211	487	34	.43	.00	
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00		
COFFEE INSTA	.06	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB ND	.30	.28	1.09	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
TABASCO SCE	.00	.10	.00					2	0	0			
SUM	256.96	45.51	46.80	8.51	466	659	6.58	1337	1665	120	3.14	4.75	79

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHD (G)	CALORIES	WEIGHT (G)
PORK BBO/RCE	10		10	3	.34	.32	6.4	.27	41	.45	2.49	21.91	443	227
APPLESAUCE				1	.01	.04	.2	.04	1			25.10	103	126
JELLY	0	.004	10	0	.00	.00	.0	.00				18.29	75	28
CRACKERS UST		.000	0	0	.98	.53	2.8	.38	0	.11	.91	32.75	199	45
CANDY AVER					.01	.06	.1	.01	1		.43	28.30	167	37
COCOA BEV PD	2920		2920	48	1.31	.11	.2	1.13	5	.30	.30	29.69	192	43
BEVERAGE BSE				25								28.19	150	34
COFFEE INSTA				15		.01	.8	.00				2.19	9	3
CREAM SUB ND				0		.03	.0	.00				2.11	19	4
SUGAR	0	.000	0	0	.00	.00	.0	.00				5.97	24	6
TABASCO SCE						.00	.0					4.90	20	5
SUM	2930	.004	2940	91	2.65	1.10	10.5	1.84	47	.86	4.14	199.40	1401	557

MENU 2	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
C BEEF HASH	157.56	29.78	13.06	3.06	25	181	3.40	878	445	34	2.15	6.80	86
PEARS DEHY	.42	.18	.04	.15	4	7	.13	9	71	5	.02	.04	
JELLY	9.70	.26	.05	.05	2	3	.11	13	11	2	.01		
CRACKERS UST	4.43	5.58	1.29	1.29	261	52	.72	184	72	12	.44		
OATML CK BAR	3.02	5.86	11.15	.63	14	84	.95	172	79	26	.29	.50	19
COCOA BEV PD	1.10	2.80	6.95	1.99	67	196	.81	211	487	34	.43		
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00	.00	
COFFEE INSTA	.06	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB ND	.30	.28	1.09	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
SUM	173.24	46.08	40.91	7.87	421	593	6.50	1487	1319	122	3.38	7.35	105

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHO (G)	CALORIES	WEIGHT (G)
C BEEF HASH		.003	10	2	.02	.20	5.2	.32	66	.68	.68	23.34	330	227
PEARS DEHY		.004	10	1	.01	.02	.1	.01	0	.19	.19	14.22	58	15
JELLY		.000	0	0	.00	.00	.0	.00	0	.11	.91	18.29	75	28
CRACKERS UST		.000	160	0	.98	.53	2.8	.38	0	.11	.91	32.75	199	45
OATML CK BAR	150	.006	2920	48	.06	.05	.6	.02	15	.30	1.95	29.33	241	50
COCOA BEV PD	2820			1.31	.11	.11	.2	1.13	5		.30	29.69	192	43
BEVERAGE BSE					.01	.01	.8	.00				28.19	150	34
COFFEE INSTA					.03	.03	.0	.00				2.19	9	3
CREAM SUB ND	0	.000	0	0	.00	.00	.0	.00				2.11	19	4
SUGAR					.00	.00						5.97	24	6
SUM	3070	.014	3100	91	2.38	.96	9.8	1.86	85	1.09	4.03	186.08	1297	454

RECORD OF NUTRITIVE VALUES NRE VIII

10/31/88

MENU 3	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
CHIX STEW	174.30	19.28	10.23	2.72	41	297	1.27	635	671	43	1.29	2.27	43
PEACHES FRDH	.36	.70	.07	.30	3	13	.31	9	113	5	.01	.00	
PEANUT BUT	.55	12.61	19.19	1.38	18	147	.71	218	289	70	.48		
CRACKERS UST	.95	4.43	5.58	1.29	261	52	.72	184	72	12	.44		
CANDY AVER	.77	2.65	4.79	.49	44	41	.44	74	67	11		.16	
COCOA BEV PD	1.10	2.80	6.95	1.99	67	196	.81	211	487	34	.43		
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00	.00	
COFFEE INSTA	.06	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB ND	.30	.28	1.09	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
TABASCO SCE	.00	.10	.00					2	0	0			
SUM	178.53	45.34	50.89	8.87	483	817	4.64	1354	1854	185	2.65	2.43	43

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHD (G)	CALORIES	WEIGHT (G)
CHIX STEW		1.948	3250		.05	.18	9.5	.23	86	.68	.45	20.28	250	227
PEACHES FRDH		.089	100	44	.01	.02	.5	.01	3		.42	13.56	58	15
PEANUT BUT	1710		1710	33	.87	.04	4.7	.08	27		1.40	8.79	258	43
CRACKERS UST	0	.000	0	0	.98	.53	2.8	.38	0	.11	.91	32.75	199	45
CANDY AVER					.01	.06	.1	.01	1		.43	28.30	167	37
COCOA BEV PD	2920		2920	48	1.31	.11	.2	1.13	5	.30	.30	29.69	192	43
BEVERAGE BSE				25								28.19	150	34
COFFEE INSTA				15		.01	.8	.00				2.19	9	3
CREAM SUB ND				0	.00	.03	0	.00				2.11	19	4
SUGAR	0	.000	0	0	.00	.00	0	.00				5.97	24	6
TABASCO SCE							.0					4.90	20	5
SUM	4630	2.007	7980	165	3.22	.98	18.7	1.84	122	1.09	3.92	176.73	1346	460

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MENU 4	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
HAM OMELET	127.86	22.59	13.00	3.21	44	362	2.28	936	332	26	1.99	1.70	338
POT AU GRAT	111.59	3.69	7.65	2.03	96	373	.37	587	272	14	1.13	.00	10
CHEESE SPR	18.17	5.68	15.77	1.72	158	235	.20	441	26	10	.65	.00	39
CRACKERS UST	.96	4.43	5.58	1.29	261	52	.72	184	72	12	.44	.50	19
OATML CK BAR	3.02	5.86	11.15	.63	14	84	.95	172	79	26	.29	.00	
COCOA 5ZV PD	1.10	2.80	6.95	1.99	67	196	.81	211	487	34	.43	.00	
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00	.00	
COFFEE INSTA	.06	.00	.00	.24	4	10	.14	2	81	8	.00	.00	
CREAM SUB MD	.30	.28	1.09	.22	7	28	.11	18	71	1	.03	.00	
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00	.00	
SUM	263.19	47.81	64.18	11.57	688	1372	5.70	2550	1421	130	4.97	2.20	406

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHO (G)	CALORIES	WEIGHT (G)
HAM OMELET	500		500		.24	.39	3.4	.19	51	.51	1.02	3.44	221	170
POT AU GRAT	430	.051	520	1	.04	.11	1.0	.06	10		.85	16.80	151	142
CHEESE SPR	2910		2910	27	.88	.07	.0	1.38	4		.21	1.19	169	43
CRACKERS UST	0	.000	0	0	.98	.53	2.8	.38	0	.11	.91	32.75	199	45
OATML CK BAR	150	.006	160		.06	.05	.6	.02	15		1.95	29.33	241	50
COCOA BEV PD	2920		2920	48	1.31	.11	.2	1.13	5	.30	.30	29.69	192	43
BEVERAGE BSE				25								28.19	150	34
COFFEE INSTA				15		.01	.8	.00				2.19	9	3
CREAM SUB MD	0	.000	0	0	.00	.03	.0	.00				2.11	19	4
SUGAR						.00	.0	.00				5.97	24	6
SUM	6910	.058	7010	116	3.51	1.32	8.8	3.16	84	.92	5.24	151.66	1375	538

RECORD OF NUTRITIVE VALUES MRE VIII

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MENU 5	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
SPAG/MT SCE	171.37	23.45	7.19	4.29	77	211	3.70	1095	635	48	2.81	2.27	27
CHEESE SPR	18.17	5.68	15.77	1.72	158	235	.20	441	26	10	.65		39
CRACKERS UST	.95	4.43	5.58	1.29	261	52	.72	184	72	12	.44		
MAPLE NUT CK	13.90	6.97	22.40	1.18	56	128	1.67	325	125	30	.61	.90	32
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00	.00	
COFFEE INSTA	.08	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB ND	.30	.28	1.09	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
TABASCO SCE	.00	.10	.00					2	0	0			
SUM	204.88	43.39	55.02	9.18	600	696	6.66	2067	1012	108	4.55	3.17	98

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHO (G)	CALORIES	WEIGHT (G)
SPAG/MT SCE	2910	.578	960	2	.14	.27	5.2	.27	41	.68	2.49	20.50	241	227
CHEESE SPR	0	.000	2910	27	.88	.07	.0	1.38	4	.11	.21	1.19	169	43
CRACKERS UST	0	.000	0	0	.98	.53	2.8	.38	0		.91	32.75	199	45
MAPLE NUT CK					.17	.19	1.6	.03	16		2.79	45.55	412	90
BEVERAGE BSE				25			.8	.00				28.19	150	34
COFFEE INSTA				15		.01	.0	.00				2.19	9	3
CREAM SUB ND	0	.000	0	0	.00	.03	.0	.00				2.11	19	4
SUGAR						.00	.0	.00				5.97	24	6
TABASCO SCE												4.90	20	5
SUM	2910	.578	3870	69	2.17	1.10	10.5	2.06	61	.79	6.41	143.35	1242	456

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MENU 6	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
CHIC ALAKING	171.52	30.03	14.41	3.27	34	229	1.84	965	415	34	1.82	2.27	84
STRAWBER SW	.13	.70	.16	.37	17	20	.51	5	131	11	.01		
PEANUT BUT	.55	12.61	19.19	1.38	18	147	.71	218	289	70	.48		
CRACKERS UST	.95	4.43	5.58	1.29	261	52	.72	184	72	12	.44		
COCOA BEV PD	1.10	2.80	6.95	1.99	67	196	.81	211	487	34	.43		
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00	.00	
COFFEE INSTA	.06	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB ND	.30	.28	1.09	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
SUM	174.76	53.34	50.37	9.00	445	715	4.97	1603	1548	170	3.21	2.27	84

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHO (G)	CALORIES	WEIGHT (G)
CHIC ALAKING		.227	390		.05	.27	7.7	.16	32	.45	.68	7.76	281	227
STRAWBER SW		.007	10	14	.01	.01	.3	.02	7		.25	13.63	59	15
PEANUT BUT	1710		1710	33	.87	.04	4.7	.08	27		1.40	8.79	258	43
CRACKERS UST	0	.000	0	0	.98	.53	2.8	.38	0	.11	.91	32.75	199	45
COCOA BEV PD	2920		2920	48	1.31	.11	.2	1.13	5	.30	.30	29.69	192	43
BEVERAGE BSE				25			.8	.00				28.19	150	34
COFFEE INSTA				15		.01	.0	.00				2.19	9	3
CREAM SUB ND	0	.000	0	0	.00	.03	.0	.00				2.11	19	4
SUGAR						.00	.0	.00				5.97	24	6
SUM	4630	.234	5020	135	3.21	1.01	16.5	1.77	71	.86	3.55	131.09	1191	419

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MENU 7	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
BEEF STEW	169.05	30.51	10.08	3.90	34	207	3.54	1044	599	43	2.41		116
CRACKERS UST	.95	4.43	5.58	1.29	261	52	.72	184	72	12	.44		
PEANUT BUT	.55	12.61	19.19	1.38	18	147	.71	218	289	70	.48		
CHERRY NTCK	17.86	6.62	16.96	1.09	51	104	1.57	304	105	26	.52	.90	23
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00	.00	
COFFEE INSTA	.06	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB NO	.30	.28	1.09	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
TABASCO SCE	.00	.10	.00					2	0	0			
SUM	188.91	57.03	55.90	8.37	413	579	6.92	1773	1219	160	3.89	.90	138

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHO (G)	CALORIES	WEIGHT (G)
BEEF STEW		1.267	2110	5	.05	.25	3.4	.27	34	1.59	1.82	13.46	267	227
CRACKERS UST		.000	0	0	.98	.53	2.8	.38	0	.11	.91	32.75	199	45
PEANUT BUT	1710		1710	33	.87	.04	4.7	.08	27		1.40	8.79	258	43
CHERRY NTCK					.13	.14	1.2	.02	13		2.61	47.46	369	90
BEVERAGE BSE				25			.8	.00				28.19	150	34
COFFEE INSTA				15		.01	.0	.00				2.19	9	3
CREAM SUB NO				0	.00	.03	.0	.00				2.11	19	4
SUGAR	0	.000	0	0	.00	.00	.0	.00				5.97	24	8
TABASCO SCE						.00	.0					4.90	20	5
SUM	1710	1.267	3820	78	2.03	1.01	12.9	.75	74	1.70	6.74	145.82	1314	456

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MENU B	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
HAM SLICES	84.07	26.22	5.32	4.21	7	359	1.46	1364	407	27	2.92	2.38	81
POT AU GRAT	111.59	3.69	7.65	2.03	96	373	.37	587	272	14	1.13	.00	10
JELLY	9.70	.26	.05	.05	2	3	.11	13	11	2	.01		
CRACKERS UST	.95	4.43	5.58	1.29	261	52	.72	184	72	12	.44		
BROWN CHCV	3.12	3.97	16.29	.54	34	72	1.44	78	121	30	.16	.80	16
COCOA BEV PO	1.10	2.80	6.95	1.99	67	196	.81	211	487	34	.43		
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00	.00	
COFFEE INSTA	.06	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB NO	.30	.28	1.09	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
SUM	211.02	44.13	45.92	10.82	515	1125	5.29	2457	1524	128	5.13	2.88	107

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHD (G)	CALORIES	WEIGHT (G)
HAM SLICES	430	.081	520	1	.29	.26	5.1	.21	5	.36	.71	.00	153	119
POT AU GRAT		.004	10	1	.04	.11	1.0	.06	10		.85	16.80	151	142
JELLY	0	.000	0	0	.00	.00	.0	.00	0			18.29	78	28
CRACKERS UST	450		450	1	.98	.53	2.8	.38	0	.11	.91	32.75	199	45
BROWN CHCV	2920		2920	48	.40	.09	.4	.27	6	.30	1.55	26.08	267	50
COCOA BEV PO				25	1.31	.11	.2	1.13	5		.30	29.68	192	43
BEVERAGE BSE				15		.01	.8	.00				28.19	150	34
COFFEE INSTA						.03		.00				2.19	9	3
CREAM SUB NO	0	.000	0	0	.00	.00	.0	.00				2.11	19	4
SUGAR						.00		.00				5.97	24	6
SUM	3800	.055	3900	91	3.02	1.15	10.4	2.06	25	.76	4.33	162.07	1238	473

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MENU 9	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
MEATBLS/RICE	146.81	32.64	15.45	5.40	48	293	4.79	1399	776	52	3.20	6.80	54
FRUIT MIX DEH	.42	.49	.13	.23	9	12	.27	6	104	7	.01	.15	
PEANUT BUT	.55	12.61	19.19	1.38	18	147	.71	218	289	70	.48		
CRACKERS UST	.95	4.43	5.58	1.29	261	52	.72	184	72	12	.44		
COOKIES CHCV	.74	3.03	12.17	.53	29	70	.99	94	90	22	.17	.43	11
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00	.00	
COFFEE INSTA	.06	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB NO	.30	.28	1.09	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
SUM	149.96	55.96	56.60	9.54	413	644	7.86	1922	1484	172	4.35	7.38	66

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHO (G)	CALORIES	WEIGHT (G)
MEATBLS/RICE			40	77	.07	.27	7.3	.25	32	.91	5.44	26.51	376	227
FRUIT MIX DEH		.023			.01	.02	.3	.01	6		.15	13.73	58	15
PEANUT BUT	1710		1710	33	.87	.04	4.7	.08	27		1.40	8.79	258	43
CRACKERS UST	0	.000	0	0	.98	.53	2.8	.38	0	.11	.91	32.75	199	45
COOKIES CHCV	490		490	2	.45	.08	.3	.27	7		.89	26.06	226	43
BEVERAGE BSE				25								28.19	150	34
COFFEE INSTA				15		.01	.8	.00				2.19	9	3
CREAM SUB NO	0	.000	0	0	.00	.03	.0	.00				2.11	19	4
SUGAR						.00		.00				5.97	24	6
SUM	2200	.023	2240	152	2.38	.98	16.2	.99	72	1.02	8.80	146.30	1318	418

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MENU IO	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
TUNA/NOODLES	172.10	26.04	8.89	2.02	29	229	2.00	603	220	39	1.36	.00	41
CRACKERS UST	.95	4.43	5.58	1.29	261	52	.72	184	72	12	.44		
CHEESE SPR	18.17	5.68	15.77	1.72	158	235	.20	441	26	10	.65		39
CH NUT CAKE	14.79	12.57	21.79	1.17	51	130	1.98	290	152	37	.52	.90	31
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00	.00	
COFFEE INSTA	.08	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB NO	.30	.28	1.09	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
SUM	208.50	51.48	56.11	6.90	548	716	5.27	1538	624	106	3.01	.90	111

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHD (G)	CALORIES	WEIGHT (G)
TUNA/NOODLES	600		600	0	.18	.14	6.8	.23	34	.45	2.04	17.76	255	227
CRACKERS UST	0	.000	0	0	.98	.53	2.8	.38	0	.11	.91	32.75	199	48
CHEESE SPR	2910		2910	27	.88	.07	.0	1.38	4		.21	1.19	169	43
CH NUT CAKE					.14	.14	1.4	.02	17		2.79	39.68	405	90
BEVERAGE BSE				25								28.19	150	34
COFFEE INSTA				15		.01	.8	.00				2.18	9	3
CREAM SUB NO	0	.000	0	0	.00	.03	.0	.00				2.11	19	4
SUGAR						.00	.0	.00				5.97	24	6
SUM	3510	.000	3510	67	2.19	.92	11.9	2.01	55	.56	5.96	129.84	1230	451

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MENU 11	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
CHIX/RICE	165.18	30.62	10.95	2.95	16	293	2.43	1039	458	36	2.22	2.27	79
PEACHES FROM	.36	.70	.07	.30	3	13	.31	9	113	5	.01	.00	
CRACKERS UST	.95	4.43	5.58	1.29	261	52	.72	184	72	12	.44		
CHEESE SPR	18.17	5.68	15.77	1.72	158	235	.20	441	26	10	.65	.43	39
COOKIES CHCV	.74	3.03	12.17	.53	29	70	.99	94	90	22	.17		11
CANDY AVER	.77	2.65	4.79	.49	44	41	.44	74	67	11	.16	.00	
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00		
COFFEE INSTA	.08	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB NO	.30	.28	1.09	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
SUM	186.66	49.87	53.42	7.98	559	774	5.46	1861	980	106	3.69	2.85	130

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHD (G)	CALORIES	WEIGHT (G)
CHIX/RICE		.059	100	44	.14	.20	12.7	.39	100	.23	.68	17.10	289	227
PEACHES FROM		.000	0	0	.01	.02	.5	.01	3	.11	.42	13.56	58	15
CRACKERS UST	0				.98	.53	2.8	.38	0		.91	32.75	199	45
CHEESE SPR	2910		2910	27	.88	.07	.0	1.38	4		.21	1.19	169	43
COOKIES CHCV	490		490	2	.45	.08	.3	.27	7		.89	26.06	226	43
CANDY AVER					.01	.06	.1	.01	1		.43	28.30	167	37
BEVERAGE BSE				25								28.19	150	34
COFFEE INSTA				15		.01	.8	.00				2.19	9	3
CREAM SUB NO	0	.000	0	0	.00	.03	.0	.00				2.11	19	4
SUGAR						.00	.0	.00				5.97	24	6
SUM	3400	.059	3500	113	2.47	1.00	17.3	2.44	115	.33	3.55	197.42	1310	455

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MENU 12	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
HAM/POTATOES	174.82	23.63	8.46	3.97	18	356	1.61	1204	576	36	2.54	2.27	50
APPLESAUCE	100.27	.23	.23	.18	5	9	.44	4	77	4	.44	.06	
CRACKERS UST	.95	4.43	5.58	1.29	261	52	.72	184	72	12	.01		
JELLY	9.70	.28	.05	.05	2	3	.11	13	11	2	.16	.50	16
BROWN CHCV	3.12	3.97	16.29	.54	34	72	1.44	78	121	30	.43	.00	
COCOA BEV PD	1.10	2.80	6.95	1.99	67	196	.81	211	487	34	.00		
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0			
COFFEE INSTA	.06	.00	.100	.24	4	10	.14	2	81	8	.03		
CREAM SUB NO	.30	.28	1.09	.22	7	28	.11	16	71	1	.00		
SUGAR	.00	.00	.100	.03	0	0	.01	0	0	0	.00		
SUM	290.45	38.09	41.63	8.72	435	757	5.51	1714	1498	127	3.62	2.82	66

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHO (G)	CALORIES	WEIGHT (G)
HAM/POTATOES	280		280		.36	.25	7.0	.36	50	.23	.68	15.92	234	227
APPLESAUCE	10		10	3	.01	.04	.2	.04	1	.11	.91	25.10	103	126
CRACKERS UST	0	.000	0	0	.98	.53	2.8	.38	0			32.75	199	45
JELLY	0	.004	10	1	.00	.00	.0	.00				18.29	75	28
BROWN CHCV	450		450	1	.40	.09	.4	.27	6	.30	1.55	26.08	267	50
COCOA BEV PD	2920		2920	48	1.31	.11	.2	1.13	5		.30	29.69	192	43
BEVERAGE BSE				25		.01	.8	.00				28.19	160	34
COFFEE INSTA				15		.03		.00				2.19	9	3
CREAM SUB NO	0	.000	0	0	.00	.00	.0	.00				2.11	19	4
SUGAR						.00		.00				5.97	24	6
SUM	3660	.004	3670	92	3.07	1.06	11.5	2.19	61	.63	3.44	196.29	1272	565

RECORD OF NUTRITIVE VALUES NRE VIII

10/31/88

ALT 1	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
FRANKFURT	64.97	15.10	20.63	2.46	19	112	1.65	899	201	14	1.92	2.10	60
POTATO T	116.33	3.56	5.43	1.83	43	57	1.05	371	352	24	.96		9
PEACHES T	101.15	.57	.13	.31	4	14	.34	8	117	6		.11	
CRACKERS UST	.95	4.43	5.58	1.29	261	52	.72	184	72	12	.44		
CHEESE SPR	18.17	5.68	15.77	1.72	158	235	.20	441	26	10	.65		39
CANDY AVER	.77	2.65	4.79	.49	44	41	.44	74	67	11	.16	.16	
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00	.00	
COFFEE INSTA	.06	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB NO	.30	.28	1.09	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
SUM	302.84	34.75	56.41	8.79	576	581	4.77	1997	988	86	4.17	2.37	107

	A (IU)	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	B12 (MCG)	E (MG)	CHO (G)	CALORIES	WEIGHT (G)
FRANKFURT				16	.05	.16	2.9	.09	7	.73	.52	1.84	253	105
POTATO T	580	.135	800	0	.01	.03	2.4	.06	7		.14	14.60	121	142
PEACHES T	420		420	4	.01	.03	.8	.03	4			25.43	105	128
CRACKERS UST	0	.000	0	0	.98	.53	2.8	.38	0	.11	.91	32.75	199	45
CHEESE SPR	2910		2910	27	.88	.07	.0	1.38	4		.21	1.19	169	43
CANDY AVER				25	.01	.06	.1	.01	1		.43	28.30	167	37
BEVERAGE BSE				15		.01	.8	.00				28.19	150	34
COFFEE INSTA						.03		.00				2.19	9	3
CREAM SUB NO	0	.000	0	0	.00	.00	.0	.00				2.11	19	4
SUGAR						.00		.00				5.97	24	6
SUM	3910	.135	4130	87	1.95	.91	9.9	1.95	24	.84	2.22	142.86	1217	545

10/31/88

ALT 2	WATER (G)	PROTEIN (G)	FAT (G)	ASH (G)	CALCIUM (MG)	PHOS (MG)	IRON (MG)	SODIUM (MG)	POTASS (MG)	MAGNESIUM (MG)	NACL (G)	ZINC (MG)	CHOLESTROL (MG)
CHILI MAC	167.85	22.91	10.64	3.52	45	256	4.08	837	644	48	2.06	4.54	57
PEARS	102.51	.26	.17	.19	6	9	.28	6	83	5		.10	
PEANUT BUT	.55	12.61	19.19	1.38	18	147	.71	218	289	70	.48		
CRACKERS UST	.95	4.43	5.58	1.29	261	52	.72	184	72	12	.44		
CANDY AVER	.77	2.65	4.79	.49	44	41	.44	74	67	11	.16		
COCOA BEV PD	1.10	2.80	6.95	1.99	67	196	.81	211	487	34	.43		
BEVERAGE BSE	.12	2.48	2.99	.22	36	33	.12	2	2	0	.00		
COFFEE INSTA	.06	.00	.00	.24	4	10	.14	2	81	8	.00		
CREAM SUB MD	.30	.28	1.08	.22	7	28	.11	16	71	1	.03		
SUGAR	.00	.00	.00	.03	0	0	.01	0	0	0	.00		
SUM	274.23	48.41	51.39	9.56	490	771	7.42	1551	1796	189	3.61	4.80	57

A	CAROTENE (MG)	TOTAL A (IU)	C (MG)	B1 (MG)	B2 (MG)	NIACIN (MG)	B6 (MG)	FOLACIN (MCG)	E (MG)	CHO (G)	CALORIES	WEIGHT (G)
CHILI MAC	.796	1330	2	.14	.29	5.7	.48	68	1.36	21.89	275	227
PEARS			1	.01	.03	.3	.01	2		24.46	100	126
PEANUT BUT		1710	33	.87	.04	4.7	.08	27	1.40	8.79	258	43
CRACKERS UST	.000	0	0	.98	.53	2.8	.38	0	.91	32.75	199	48
CANDY AVER				.01	.06	.1	.01	1	.43	28.30	187	37
COCOA BEV PD		2920	48	1.31	.11	.2	1.13	5	.30	29.69	192	43
BEVERAGE BSE			25		.01	.8	.00			28.19	150	34
COFFEE INSTA			15		.03		.00			2.19	9	3
CREAM SUB MD				.00	.00	.0	.00			2.11	19	4
SUGAR	.000	0	0	.00	.00		.00			5.97	24	6
SUM	.796	5960	124	3.32	1.11	14.6	2.09	103	4.40	184.34	1394	568

NOTE 1: CARBOHYDRATE HAS BEEN COMPUTED BY DIFFERENCE

NOTE 2: COCOA BEVERAGE POWDER, CHEESE SPREAD AND THE COATINGS FOR OATMEAL COOKIES AND BROWNIES ARE FORTIFIED WITH VITAMIN A, ASCORBIC ACID, THIAMIN AND PYRIDOXINE. PEANUT BUTTER IS FORTIFIED WITH VITAMIN A, ASCORBIC ACID AND THIAMIN. COFFEE IS FORTIFIED WITH ASCORBIC ACID. CRACKERS ARE FORTIFIED WITH CALCIUM CARBONATE, THIAMIN, RIBOFLAVIN, NIACIN AND PYRIDOXINE.

NOTE 3: CALORIES HAVE BEEN COMPUTED USING 4, 9, 4, CALORIE FACTORS.

NOTE 4: NO ADJUSTMENTS HAVE BEEN MADE TO COMPENSATE FOR NUTRITIONAL LOSSES DURING STORAGE.

NOTE 5: BLANKS IN COLUMNS REPORTING NaCl, ZINC, CHOLESTEROL, FOLACIN, VITAMINS B12 AND E DATA INDICATE MISSING DATA, NOT ZERO VALUES.

MEAL, RETROV-TO-EAT CANDIES

	WATER	PROTEIN	FAT	ASH	CA	PHOS	IRON	SODIUM	POTASS	MAGNES	NACL	ZINC		
CARAMELS	1.31	1.29	3.36	0.53	39	32	0.27	141	67	5	0.33	0		
MILK	0.6	6.67	10.7	0.84	87	88	0.52	73	132	28	0.15	0.48		
CHOCOS	0.4	0	0.31	0.09	6	2	0.54	9	1					
AVERAGE	0.77	2.65	4.73	0.49	41	41	0.44	71	33	11	0.16	0.16		
	A	(NPD)	TOTAL	C	FI	FI2	NITR	B6	FOL ACIN	BI2	E	CHO	CALORIES	WEIGHT
CARAMELS					0.01	0.05	0.1	0.01	0	0	0.14	28.51	149	35
MILK				0	0.02	0.12	0.3	0.01	4	4	1.15	29.17	240	48
CHOCOS					0	0	0	0	0	0		27.56	113	28
AVERAGE					0.01	0.06	0.1	0.01	1	1	0.43	10.51	167	37

APPENDIX F. Nutrient Information for the SEP MRE

Nutritionist III

SEPSUB1

Item	Food Name	Serving	Portion	Amount
2131	MRE PORK BBQ/RCE	1.000	SERVING	227.0 GMS
294	PEARS-CAN/HEAVY SYRUP	127.6	GRAMS	127.6 GMS
2093	CHEESE CURLS	1.000	SERVING	28.4 GMS
2232	MRE CANDY AVER	1.000	SERVING	42.0 GMS
2097	DENTAL LIQUID MILK SHAKE	1.000	SERVING	100.0 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.0 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.0 GMS
2226	MRE SUGAR	1.000	SERVING	6.0 GMS
2227	MRE TABASCO SAUCE	1.000	SERVING	5.0 GMS

Nutrient Values

+Kilocalories	1350 Kc	Protein	56.93 Gm
+Carbohydrate	166.8 Gm	+Fat	50.14 Gm
+Cholesterol	79.00 Mg	+Sodium	1511 Mg
+Potassium	2275 Mg	Magnesium	133.6 Mg
Iron	5.150 Mg	Zinc	6.645 Mg
Vitamin A	1520 IU	Vitam. E/Total	4.290 Mg
Vitamin C	16.45 Mg	Thiamin	0.503 Mg
Riboflavin	1.298 Mg	Niacin	8.209 Mg
Vitamin B6	0.398 Mg	Folate	56.50 Ug
Vitamin B12	1.160 Ug	Calcium	724.0 Mg
Phosphorus	780.5 Mg	Ash	9.770 Gm

+ Dietary Goal

Percent of Kcals from: PROT: 17% CARB: 50% FAT: 34% ALCO: 0%

Milk: 0.0 Veg: 0.0 Fruit: 1.7 Bread: 9.3 Meat: 5.2 Fat: 7.1

Nutritionist III

SEPSTROG

Item	Food Name	Serving	Portion	Amount
2581	BEEF STROGANOFF	8.000	OUNCES	226.8 GMS
1964	MRE Pouch Bread	1.000	ITEM	57.0 GMS
2094	CORN CHIPS	1.000	SERVING	28.4 GMS
2583	ALMOND FRUIT CHEW BAR	1.000	SERVING	47.5 GMS
2215	MRE COOKIES CHCV	1.000	SERVING	43.0 GMS
2137	MRE BEVERAGE BSE	1.000	SERVING	34.0 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.0 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.0 GMS
2226	MRE SUGAR	1.000	SERVING	6.0 GMS

Nutrient Values

+Kilocalories	1273 Kc	Protein	51.00 Gm
+Carbohydrate	151.1 Gm	+Fat	51.32 Gm
+Cholesterol	17.14 Mg	+Sodium	1619 Mg
+Potassium	1191 Mg	Magnesium	112.4 Mg
Iron	7.621 Mg	Zinc	3.598 Mg
Vitamin A	750.8 IU	Vitam. E/Total	4.485 Mg
Vitamin C	42.00 Mg	Thiamin	0.898 Mg
Riboflavin	0.855 Mg	Niacin	11.57 Mg
Vitamin B6	0.298 Mg	Folate	19.90 Ug
Vitamin B12	2.495 Ug #	Calcium	233.4 Mg
Phosphorus	430.2 Mg	Ash	6.798 Gm

More than 50% of nutrient data is missing
 + Dietary Goal

Percent of Kcals from: PROT: 16% CARB: 48% FAT: 36% ALCO: 0%

Milk: 0.0 Veg: 0.0 Fruit: 0.0 Bread: 7.0 Meat: 5.7 Fat: 7.8

Nutritionist III

sepburr: 9 Foods

Item	Food Name	Serving	Portion	Amount
2694	BEEF AND CHEESE POCKET	1.000	SERVING	201 GMS
2094	CORN CHIPS	1.000	SERVING	28.400 GMS
2143	MRE CHEESE SPR	1.000	SERVING	43.000 GMS
294	PEARS-CAN/HEAVY SYRUP	5.000	OUNCES	142 GMS
2137	MRE BEVERAGE BSE	1.000	SERVING	34.000 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.000 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.000 GMS
2226	MRE SUGAR	1.000	SERVING	6.000 GMS
2227	MRE TABASCO SAUCE	1.000	SERVING	5.000 GMS

Nutrient Values

+Kilocalories	1312 Kc	Vitam. E/Total	10.210 Mg
Protein	36.824 Gm	Vitamin C	81.712 Mg
+Carbohydrate	158 Gm	Thiamin	1.374 Mg
+Fat	47.063 Gm	Riboflavin	0.640 Mg
+Cholesterol	106 Mg	Niacin	7.883 Mg
+Sodium	951 Mg	Vitamin B6	1.670 Mg
+Potassium	861 Mg	Folate	30.968 Ug
Magnesium	84.315 Mg	Vitamin B12	1.330 Ug
Iron	5.551 Mg	Calcium	460 Mg
Zinc	3.947 Mg	Phosphorus	653 Mg
Vitamin A	3993 RE	Ash	5.571 Gm

+ Dietary Goal

Percent of KCALS from: PROT: 12% CARB: 53% FAT: 35%

Milk: 0.0 Veg: 1.1 Fruit: 1.9 Bread: 7.1 Meat: 2.5 Fat: 7.4

Nutritionist III

SEPPORK

Item	Food Name	Serving	Portion	Amount
2561	PORK CHOW MEIN	8.000	OUNCES	226.8 GMS
2559	MRE POUND CAKE VANILLA	1.000	SERVING	94.0 GMS
2075	CIDER MIX RCW	1.000	SERVING	50.0 GMS
1781	CANDY-M & M'S-PACKAGE	48.00	GRAMS	48.0 GMS
449	NOODLES-CHOW MEIN-CANNED	1.000	OUNCE	28.4 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.0 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.0 GMS
2226	MRE SUGAR	1.000	SERVING	6.0 GMS
2227	MRE TABASCO SAUCE	1.000	SERVING	5.0 GMS

Nutrient Values

+Kilocalories	1333 Kc	Protein	35.24 Gm
+Carbohydrate	180.7 Gm	+Fat	53.50 Gm
+Cholesterol	66.65 Mg	+Sodium	1297 Mg
+Potassium	660.2 Mg	Magnesium	46.44 Mg
Iron	116.8 Mg	Zinc	6.688 Mg
Vitamin A	18.14 IU	Vitam. E/Total	5.191 Mg
Vitamin C	21.00 Mg	Thiamin	0.295 Mg
Riboflavin	0.426 Mg	Niacin	4.656 Mg
Vitamin B6	0.000 Mg #	Folate	0.000 Ug #
Vitamin B12	0.680 Ug	Calcium	143.8 Mg
Phosphorus	282.4 Mg	Ash	5.014 Gm

More than 50% of nutrient data is missing

+ Dietary Goal

Percent of Kcals from: PROT: 10% CARB: 54% FAT: 36% ALCO: 0%

Milk: 0.0 Veg: 0.0 Fruit: 0.0 Bread: 9.0 Meat: 3.5 Fat: 7.3

Nutritionist III

SEPSUB5

Item	Food Name	Serving	Portion	Amount
2144	MRE SPAG/MT SCE	1.000	SERVING	227.0 GMS
2143	MRE CHEESE SPR	1.000	SERVING	43.0 GMS
1965	MRE CRACKERS	1.000	ITEM	45.0 GMS
2557	MRE POUND CAKE ORANGE	1.000	SERVING	94.0 GMS
2137	MRE BEVERAGE BSE	1.000	SERVING	34.0 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.0 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.0 GMS
2226	MRE SUGAR	1.000	SERVING	6.0 GMS
2227	MRE TABASCO SAUCE	1.000	SERVING	5.0 GMS

Nutrient Values

+Kilocalories	1288 Kc	Protein	41.23 Gm
+Carbohydrate	156.5 Gm	+Fat	55.55 Gm
+Cholesterol	66.00 Mg	+Sodium	1947 Mg
+Potassium	960.0 Mg	Magnesium	84.62 Mg
Iron	5.553 Mg	Zinc	5.590 Mg
Vitamin A	3870 IU	Vitam. E/Total	3.610 Mg
Vitamin C	69.00 Mg	Thiamin	2.000 Mg
Riboflavin	0.910 Mg	Niacin	8.800 Mg
Vitamin B6	2.030 Mg	Folate	45.00 Ug
Vitamin B12	0.790 Ug	Calcium	560.8 Mg
Phosphorus	642.0 Mg	Ash	8.762 Gm

+ Dietary Goal

Percent of Kcals from: PROT: 13% CARB: 48% FAT: 39% ALCO: 0%

Milk: 0.0 Veg: 0.0 Fruit: 0.0 Bread: 10.1 Meat: 3.0 Fat: 5.2

Nutritionist III

SEPFRANK

Item	Food Name	Serving	Portion	Amount
2617	MRE Smoky Frankfurters	1.000	SERVING	106.0 GMS
1964	MRE Pouch Bread	1.000	ITEM	57.0 GMS
2334	DURKEE POTATO STICKS	1.000	OUNCE	28.4 GMS
2585	ORANGE COCONUT FRUIT CHEW	1.000	SERVING	47.5 GMS
2097	DENTAL LIQUID MILK SHAKE	1.000	SERVING	100.0 GMS
674	TOMATO CATSUP	7.000	GRAMS	7.0 GMS
700	MUSTARD-YELLOW-PREPARED	0.200	OUNCE	5.7 GMS
706	PICKLE RELISH-SWEET	0.330	OUNCE	9.4 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.0 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.0 GMS
2226	MRE SUGAR	1.000	SERVING	6.0 GMS

Nutrient Values

+Kilocalories	1307 Kc	Protein	43.09 Gm
+Carbohydrate	159.1 Gm	+Fat	48.66 Gm
+Cholesterol	3.650 Mg	+Sodium	2314 Mg
+Potassium	2128 Mg	Magnesium	122.5 Mg
Iron	5.772 Mg	Zinc	2.732 Mg
Vitamin A	1618 IU	Vitam. E/Total	3.136 Mg
Vitamin C	15.93 Mg	Thiamin	0.480 Mg
Riboflavin	0.972 Mg	Niacin	2.434 Mg
Vitamin B6	0.135 Mg	Folate	25.25 Ug
Vitamin B12	0.000 Ug #	Calcium	784.8 Mg
Phosphorus	818.1 Mg	Ash	10.79 Gm

More than 50% of nutrient data is missing

+ Dietary Goal

Percent of Kcals from: PROT: 14% CARB: 51% FAT: 35% ALCO: 0%

Milk: 0.0 Veg: 0.0 Fruit: 0.0 Bread: 7.8 Meat: 3.4 Fat: 7.4

Nutritionist III

sepchip2: 9 Foods

Item	Food Name	Serving	Portion	Amount
2582	Creamed Chipped Beef	1.000	SERVING	227 GMS
322	BISCUITS-HOME RECIPE	81.000	GRAMS	81.000 GMS
2584	OATMEAL HERMIT FRUIT CHEW	1.000	SERVING	47.500 GMS
2092	TAVERN NUTS	1.000	SERVING	28.400 GMS
285	PEACHES-CAN/HEAVY SYRUP	5.000	OUNCES	142 GMS
2074	LEMON TEA RCW	2.000	SERVINGS	28.000 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.000 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.000 GMS
2226	MRE SUGAR	1.000	SERVING	6.000 GMS

Nutrient Values

+Kilocalories	1199 Kc	Vitam. E/Total	2.008 Mg #
Protein	33.708 Gm	Vitamin C	18.931 Mg
+Carbohydrate	155 Gm	Thiamin	0.247 Mg
+Fat	52.323 Gm	Riboflavin	0.305 Mg
+Cholesterol	0.000 Mg #	Niacin	3.694 Mg
+Sodium	1909 Mg	Vitamin B6	0.027 Mg #
+Potassium	1043 Mg	Folate	4.540 Ug #
Magnesium	93.418 Mg	Vitamin B12	0.000 Ug #
Iron	4.479 Mg	Calcium	193 Mg
Zinc	5.137 Mg	Phosphorus	400 Mg
Vitamin A	470 RE	Ash	5.650 Gm

More than 50% of nutrient data is missing

+ Dietary Goal

Percent of KCALS from: PROT: 11% CARB: 51% FAT: 38%

Milk: 0.0 Veg: 0.0 Fruit: 1.9 Bread: 5.3 Meat: 3.4 Fat: 7.8

Nutritionist III

sepsand: 10 Foods

Item	Food Name	Serving	Portion	Amount
2134	MRE HAM SLICES	1.000	SERVING	119 GMS
1964	MRE Pouch Bread	1.000	ITEM	57.000 GMS
2143	MRE CHEESE SPR	1.000	SERVING	43.000 GMS
2334	DURKEE POTATO STICKS	1.000	SERVING	15.000 GMS
2586	TROPICAL PUNCH FRUIT CHEW	1.000	SERVING	47.500 GMS
2072	ORANGE BEVERAGE RCW	1.000	SERVING	60.000 GMS
537	CANDY-CARAMELS-PLAIN/CHOC	35.000	GRAMS	35.000 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.000 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.000 GMS
2226	MRE SUGAR	1.000	SERVING	6.000 GMS

Nutrient Values

+Kilocalories	1242 Kc	Vitam. E/Total	4.520 Mg
Protein	41.270 Gm	Vitamin C	148 Mg
+Carbohydrate	166 Gm	Thiamin	1.953 Mg
+Fat	42.880 Gm	Riboflavin	1.023 Mg
+Cholesterol	124 Mg	Niacin	7.825 Mg
+Sodium	2397 Mg	Vitamin B6	2.050 Mg
+Potassium	1259 Mg	Folate	24.000 Ug
Magnesium	78.750 Mg	Vitamin B12	0.360 Ug #
Iron	6.310 Mg	Calcium	797 Mg
Zinc	2.950 Mg	Phosphorus	953 Mg
Vitamin A	2910 RE	Ash	9.415 Gm

More than 50% of nutrient data is missing

+ Dietary Goal

Percent of KCALS from: PROT: 14% CARB: 55% FAT: 32%

Milk: 0.0 Veg: 0.0 Fruit: 0.0 Bread: 8.7 Meat: 0.3 Fat: 4.0

Nutritionist III

SEPPITZA

Item	Food Name	Serving	Portion	Amount
475	PIZZA-CHEESE-BAKED	126.0	GRAMS	126.0 GMS
2095	ONION RING CHIPS	1.000	SERVING	28.4 GMS
2556	MRE POUND CAKE LEMON	1.000	SERVING	94.0 GMS
2097	DENTAL LIQUID MILK SHAKE	1.000	SERVING	100.0 GMS
2140	MRE PEACHES FRDH	1.000	SERVING	15.0 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.0 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.0 GMS
2226	MRE SUGAR	1.000	SERVING	6.0 GMS
2227	MRE TABASCO SAUCE	1.000	SERVING	5.0 GMS

Nutrient Values

+Kilocalories	1454 Kc	Protein	41.94 Gm
+Carbohydrate	202.8 Gm	+Fat	53.29 Gm
+Cholesterol	18.00 Mg #	+Sodium	1392 Mg
+Potassium	1792 Mg	Magnesium	109.0 Mg
Iron	2.691 Mg	Zinc	9.150 Mg
Vitamin A	2384 IU	Vitam. E/Total	2.220 Mg
Vitamin C	61.57 Mg	Thiamin	0.510 Mg
Riboflavin	1.244 Mg	Niacin	6.863 Mg
Vitamin B6	0.187 Mg	Folate	133.3 Ug
Vitamin B12	0.669 Ug	Calcium	893.2 Mg
Phosphorus	758.3 Mg	Ash	9.409 Gm

More than 50% of nutrient data is missing
 + Dietary Goal

Percent of Kcals from: PROT: 12% CARB: 56% FAT: 33% ALCO: 0%

Milk: 0.0 Veg: 0.0 Fruit: 0.0 Bread:12.6 Meat: 1.6 Fat:43.0

Nutritionist III

SEPSUB10

Item	Food Name	Serving	Portion	Amount
1980	MRE TUNA NOODLES	1.000	SERVING	227.0 GMS
1965	MRE CRACKERS	1.000	ITEM	45.0 GMS
2143	MRE CHEESE SPR	1.000	SERVING	43.0 GMS
2587	CHOCOLATE POUND CAKE	1.000	SERVING	94.0 GMS
2137	MRE BEVERAGE BSE	1.000	SERVING	34.0 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.0 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.0 GMS
2226	MRE SUGAR	1.000	SERVING	6.0 GMS

Nutrient Values

+Kilocalories	1309 Kc	Protein	43.78 Gm
+Carbohydrate	154.1 Gm	+Fat	54.15 Gm
+Cholesterol	80.00 Mg	+Sodium	1248 Mg
+Potassium	472.0 Mg	Magnesium	69.10 Mg
Iron	3.300 Mg	Zinc	0.000 Mg
Vitamin A	3510 IU	Vitam. E/Total	3.160 Mg
Vitamin C	67.00 Mg	Thiamin	2.040 Mg
Riboflavin	0.780 Mg	Niacin	10.40 Mg
Vitamin B6	1.990 Mg	Folate	38.00 Ug
Vitamin B12	0.560 Ug	Calcium	495.0 Mg
Phosphorus	587.0 Mg	Ash	6.920 Gm

+ Dietary Goal

Percent of Kcals from: PROT: 14% CARB: 48% FAT: 38% ALCO: 0%

Milk: 0.0 Veg: 0.0 Fruit: 0.0 Bread: 10.4 Meat: 5.2 Fat: 5.2

Nutritionist III

SEPSUB11

Item	Food Name	Serving	Portion	Amount
2618	MRE CHICKEN AND RICE	1.000	SERVING	227.0 GMS
285	PEACHES-CAN/HEAVY SYRUP	127.6	GRAMS	127.6 GMS
2215	MRE COOKIES CHCV	1.000	SERVING	43.0 GMS
1965	MRE CRACKERS	1.000	ITEM	45.0 GMS
2143	MRE CHEESE SPR	1.000	SERVING	43.0 GMS
2232	MRE CANDY AVER	1.000	SERVING	42.0 GMS
2137	MRE BEVERAGE BSE	1.000	SERVING	34.0 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.0 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.0 GMS
2226	MRE SUGAR	1.000	SERVING	6.0 GMS

Nutrient Values

+Kilocalories	1364 Kc	Protein	50.37 Gm
+Carbohydrate	173.2 Gm	+Fat	53.56 Gm
+Cholesterol	129.0 Mg	+Sodium	1859 Mg
+Potassium	982.1 Mg	Magnesium	106.6 Mg
Iron	5.704 Mg	Zinc	2.810 Mg
Vitamin A	3823 IU	Vitam. E/Total	2.690 Mg
Vitamin C	72.54 Mg	Thiamin	2.474 Mg
Riboflavin	1.010 Mg	Niacin	17.48 Mg
Vitamin B6	2.454 Mg	Folate	117.1 Ug
Vitamin B12	1.050 Ug	Calcium	553.0 Mg
Phosphorus	775.5 Mg	Ash	7.939 Gm

+ Dietary Goal

Percent of Kcals from: PROT: 15% CARB: 50% FAT: 35% ALCO: 0%

Milk: 0.0 Veg: 0.0 Fruit: 1.7 Bread: 9.3 Meat: 4.4 Fat: 5.0

Nutritionist III

SEPSUB12

Item	Food Name	Serving	Portion	Amount
1998	MRE HAM AND POTATOES	1.000	SERVING	227.0 GMS
2558	MRE POUND CAKE PINEAPPLE	1.000	SERVING	94.0 GMS
2540	BACHMAN PRETZEL STIX	1.000	SERVING	28.4 GMS
2097	DENTAL LIQUID MILK SHAKE	1.000	SERVING	100.0 GMS
2224	MRE COFFEE INSTANT	1.000	SERVING	3.0 GMS
2225	MRE CREAMER SUB ND	1.000	SERVING	4.0 GMS
2226	MRE SUGAR	1.000	SERVING	6.0 GMS

Nutrient Values

+Kilocalories	1285 Kc	Protein	50.47 Gm
+Carbohydrate	176.1 Gm	+Fat	42.85 Gm
+Cholesterol	50.00 Mg	+Sodium	2334 Mg
+Potassium	2007 Mg	Magnesium	111.1 Mg
Iron	4.523 Mg	Zinc	8.690 Mg
Vitamin A	1800 IU	Vitam. E/Total	2.480 Mg
Vitamin C	15.00 Mg	Thiamin	0.650 Mg
Riboflavin	1.395 Mg	Niacin	11.40 Mg
Vitamin B6	0.460 Mg	Folate	62.00 Ug
Vitamin B12	0.230 Ug	Calcium	678.1 Mg
Phosphorus	875.3 Mg	Ash	10.07 Gm

+ Dietary Goal

Percent of Kcals from: PROT: 16% CARB: 55% FAT: 30% ALCO: 0%

Milk: 0.0 Veg: 0.0 Fruit: 0.0 Bread: 11.7 Meat: 3.9 Fat: 5.8

APPENDIX G. Weight Checklist

DAY _____ GROUP _____	WEIGHT	BOOTS	SOCKS	BDU		UNDERWEAR		BELT	LONGJOHN TOP/BOTTOM	FIELD JACKET AND/OR LINER	SLEEP SHIRT	OTHER
			____ PAIRS	TOP	BOT- TOM	T-SHIRT	Y N	YES	TOP BOTTOM	JACKET Y N LINER Y N	YES NO	
		CORCORAN JUNGLE COMBAT	WOOL SPORT	HOT COLD NONE	HOT COLD NONE	T-SHIRT	Y N	YES	TOP BOTTOM NONE	JACKET Y N LINER Y N	YES NO	
		CORCORAN JUNGLE COMBAT	WOOL SPORT	HOT COLD NONE	HOT COLD NONE	T-SHIRT	Y N	YES	TOP BOTTOM NONE	JACKET Y N LINER Y N	YES NO	
		CORCORAN JUNGLE COMBAT	WOOL SPORT	HOT COLD NONE	HOT COLD NONE	T-SHIRT	Y N	YES	TOP BOTTOM NONE	JACKET Y N LINER Y N	YES NO	
		CORCORAN JUNGLE COMBAT	WOOL SPORT	HOT COLD NONE	HOT COLD NONE	T-SHIRT	Y N	YES	TOP BOTTOM NONE	JACKET Y N LINER Y N	YES NO	
		CORCORAN JUNGLE COMBAT	WOOL SPORT	HOT COLD NONE	HOT COLD NONE	T-SHIRT	Y N	YES	TOP BOTTOM NONE	JACKET Y N LINER Y N	YES NO	
		CORCORAN JUNGLE COMBAT	WOOL SPORT	HOT COLD NONE	HOT COLD NONE	T-SHIRT	Y N	YES	TOP BOTTOM NONE	JACKET Y N LINER Y N	YES NO	
		CORCORAN JUNGLE COMBAT	WOOL SPORT	HOT COLD NONE	HOT COLD NONE	T-SHIRT	Y N	YES	TOP BOTTOM NONE	JACKET Y N LINER Y N	YES NO	
		CORCORAN JUNGLE COMBAT	WOOL SPORT	HOT COLD NONE	HOT COLD NONE	T-SHIRT	Y N	YES	TOP BOTTOM NONE	JACKET Y N LINER Y N	YES NO	
		CORCORAN JUNGLE COMBAT	WOOL SPORT	HOT COLD NONE	HOT COLD NONE	T-SHIRT	Y N	YES	TOP BOTTOM NONE	JACKET Y N LINER Y N	YES NO	
		CORCORAN JUNGLE COMBAT	WOOL SPORT	HOT COLD NONE	HOT COLD NONE	T-SHIRT	Y N	YES	TOP BOTTOM NONE	JACKET Y N LINER Y N	YES NO	

APPENDIX H. Focus Group Script

Focus Group Script

Today we're going to be talking about one of everybody's favorite subjects: FOOD.

GENERAL QUESTIONS:

1. What kinds of foods do you like to eat when you're out in the field? Do you like certain kinds of foods at certain times of the day? Which ones and when? What are your favorites?
2. Let's talk about the tray packs that you've been having. First let's talk about the breakfast items. What did you like? What did you dislike? What item did you like best....least....Did you feel there was enough variety in each breakfast? How about variety of breakfasts, is there enough? Were your breakfasts: appealing, filling, satisfying, tasty? How was the appearance, texture, and flavor? How did you feel about the portion sizes? Was it enough or too much?
3. Now let's discuss the lunch items. What did you like? What did you dislike? (Repeat breakfast questions.)
4. Now let's discuss the dinner items. What did you like? What did you dislike? (Repeat breakfast questions.)
5. How important is the temperature of the food to you? Do you like to have hot meals? When the tray packs were served, were they hot enough? How about when you ate, were your meals hot enough?
6. Do you have any SUGGESTIONS for breakfast items that you'd like to see added to the menus? If so, please write them down. What about lunch items...Dinner items...Snack items. Are there any items that you'd like to see dropped from the menus? Write those down also.
7. Do you like having supplements with your tray packs like cereal, milk, bread, fruit?
8. Have you noticed any improvements in the tray packs?
9. How would you compare them to the MRE's? How about the CRATS?
10. Now let's talk about the MRE's that you've been having during the last two weeks. What did you like about them? What did you dislike? Have you noticed any improvements? Do you have any suggestions for items that you feel should be added to the MRE's? Are there any items that you feel should be dropped?
11. Think about the different climates, i.e., arctic, desert, jungle, high altitude....Do you feel certain foods are best served in different climates....Which ones, and where? (LIST THEM ON YOUR SHEET.)

12. What does a meal mean to you? What does it consist of? (PLEASE WRITE THE ITEMS DOWN AND THEN CIRCLE THE MOST IMPORTANT FOOD IN THE MEAL AND THEN RANK ORDER THE REST OF THE FOODS IN ORDER OF IMPORTANCE FROM 1 TO __. 1 IS MOST IMPORTANT...When you're in the field do you like to eat three times a day, have one big meal or do you like just snacking all day? What makes you enjoy some meals more than others?

13. If you could design a ration to be eaten in the field and had to describe the foods you would need for each entire day, what would it consist of? Specifically, how many entrees per day, how many vegetable or fruit servings, how many beverage items, how many dessert items, and how many snack items? (LIST THEM ON YOUR SHEET. If there would be any differences for each climate, please make a note of it.)

14. What form would you like them to be in? That is, would you like to see some moist, some dry, etc?

15. Before you joined the Army, did you ever hear anything about the food? If so, tell me what you heard? Where did you hear it? What did you expect the food to be like? Do you have any idea why you felt that way?

16. After joining the Army, what did you think of the food? What did you like about it? What did you dislike about it?

17. When you got into basic training, were you informed about the food? If so, what were you told?

18. Was there something that you felt you would have liked to have been told that wasn't?

19. We're going to switch gears for a moment. HERE IS A LIST OF WORDS THAT MIGHT BE ASSOCIATED WITH FOODS SERVED IN THE FIELD. PLEASE LOOK AT THE LIST AND CIRCLE THE ONES THAT YOU FEEL ARE IMPORTANT DESCRIPTORS OF FOODS THAT YOU EAT. NOW DO THE SAME THING ON THE SHEET MARKED SNACKS.

NOW LOOK AT THE SHEET MARKED "HOME" AND CIRCLE THE WORDS THAT DESCRIBE FOODS THAT YOU EAT. NOW DO THE SAME THING ON THE SHEET MARKED SNACKS THAT YOU EAT AT "HOME".

20. The last thing that we're going to talk about are ethnic foods. Just so we'll all be familiar with the term, the definition is: Foods that originate from the hereditary or cultural traits shared by members of a group.

20a. Would you like to have ethnic foods served in the Army? If so, what are your suggestions? In what ration?

20b. Do you like to eat ethnic foods from other ethnic backgrounds?

THANK YOU SO MUCH FOR PARTICIPATING. YOU'VE BEEN EXTREMELY HELPFUL.

APPENDIX I. Flameless Ration Heater Questionnaire

U.S. ARMY NATICK RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER is currently conducting an evaluation of the Flameless Ration Heater (FRH). This questionnaire asks you to evaluate how useful the FRH is for heating the Meal, Ready-to-Eat (MRE). Your answers will help developers provide you with a better field feeding system. Please answer honestly and thoughtfully. To make your answers confidential, we have not asked for your name or social security number. Thank you.

Name: _____

Social Security Number (last four digits only): _____

Age? _____ years

What is your rank? E-_____ O-_____ WO-_____

How long have you been in the Armed Services? _____ years _____ months

What is your MOS/RATING?

Please describe the type(s) of field situation(s) in which you used the Flameless Ration Heater. Include location, your job, tasks, etc.
(For example, Ft. Carson, Tank Commander/M60A3, Offensive Maneuvers)

Over what period of time did you use the FRH to heat your MREs?
(Please specify dates as accurately as possible).

Between _____ and _____.

1. Did you use the Flameless Ration Heater (FRH) to heat your MRE entrees?

YES

NO

If NO, please turn in your questionnaire now.

2. In what types of climates did you use the FRH? Circle ALL that apply.

a. Hot, dry weather

d. Cold, dry weather,

b. Hot, humid weather

e. Cold, wet weather

c. Temperate Conditions

3. In what temperatures (^oFahrenheit) did you usually use the FRH? Circle ONE answer only.

- | | |
|--|--|
| a. Extremely Hot (above 95 ^o F) | e. Cold (32 ^o F to 59 ^o F) |
| b. Very Hot (85 ^o F to 95 ^o F) | f. Very Cold (0 ^o F to 31 ^o F) |
| c. Hot (75 ^o F to 84 ^o F) | g. Extremely Cold (below 0 ^o F) |
| d. Moderate (60 ^o F to 74 ^o F) | h. The weather was very
inconsistent in temperature |

4. Approximately how many times have you used FRHs to heat MRE entrees?

_____times

If you used it less than 10 times, what was the biggest reason why?

---For questions 5 through 9, circle one response from the scale below.---

5. After heating with the FRH, what was the temperature of the MRE entree?

COLD	COOL	NEITHER WARM NOR COOL	WARM	HOT
1	2	3	4	5

6. How does the MRE entree taste when you've heated it with the FRH, compared to eating the MRE entree cold:

The FRH made the MRE entree taste:

MUCH WORSE	MODERATELY WORSE	SLIGHTLY WORSE	ABOUT THE SAME	SLIGHTLY BETTER	MODERATELY BETTER	MUCH BETTER
1	2	3	4	5	6	7

7. Please indicate how slow or fast you felt it took to heat the MRE entree using the FRH.

VERY SLOW	MODERATELY SLOW	SLIGHTLY SLOW	NEITHER SLOW NOR FAST	SLIGHTLY FAST	MODERATELY FAST	VERY FAST
1	2	3	4	5	6	7

8. How easy or difficult is it to use the FRH to heat the MRE entree?

VERY DIFFICULT	MODERATELY DIFFICULT	SLIGHTLY DIFFICULT	NEITHER DIFFICULT NOR EASY	SLIGHTLY EASY	MODERATELY EASY	VERY EASY
1	2	3	4	5	6	7

9. Please rate the overall acceptability for use of the FRH in the field.

VERY BAD	MODERATELY BAD	SLIGHTLY BAD	NEITHER BAD NOR GOOD	SLIGHTLY GOOD	MODERATELY GOOD	VERY GOOD
1	2	3	4	5	6	7

10. Were any of the following a problem for you while using the FRH to heat the MRE entree? Check ONE for each item.

	NOT A PROBLEM	SLIGHT PROBLEM	MODERATE PROBLEM	LARGE PROBLEM
a. Adding water to bag	_____	_____	_____	_____
b. Too hot to handle	_____	_____	_____	_____
c. FRH not heating up	_____	_____	_____	_____
d. Smell produced during heating	_____	_____	_____	_____
e. Water spilling out of plastic bag	_____	_____	_____	_____
f. Residue or foam caused by heating process	_____	_____	_____	_____
g. Other (Specify:_____)	_____	_____	_____	_____

11. Did you get burned while using/handling the FRH?

YES NO

If YES, to what extent? Circle one response.

- a. Skin was sore for a little while
- b. Skin blistered
- c. Medical attention was required

12. If an FRH were packaged with each MRE, how often do you think you would use it to heat the MRE entree? Circle one response.

NEVER	ALMOST NEVER	SOMETIMES	ALMOST ALWAYS	ALWAYS
1	2	3	4	5

13. If FRHs were not packaged with the MRE but were made available separately for your use, how often do you think you would heat your MRE entree with the FRH? Circle one response.

- a. I would never use the FRH to heat the MRE entree.
- b. I would use the FRH to heat one out of every three MRE entrees that I eat.
- c. I would use the FRH to heat every other MRE entree that I eat (one out of every two).
- d. I would use the FRH to heat every MRE entree that I eat.
- e. Other (Specify:_____)

14. Which method of packaging would you prefer? Circle one response only.

- a. FRH packaged with the MRE
- b. FRH packaged separately from the MRE

Please explain why in the space provided below.

15. For what reasons would you NOT use the FRH to heat the MRE entree? Please circle ALL that apply.

- a. I would almost always use them
- b. Too complicated
- c. Doesn't heat well
- d. Mission does not allow extra time in which to use FRH
- e. FRH takes too long to heat food
- f. Wouldn't waste water for heating
- g. Produces bad smell
- h. Creates a mess
- i. Prefer other methods of heating (Specify:_____)
- j. Other (Specify:_____)

16. If you were not able to use the FRH to heat the MRE entree, would you save it for later or throw it away? Circle one response.

SAVE IT

THROW IT AWAY

U.S. Army Natick RD&E Center
STRNC-YBH (R. Guerra)
100 Kansas Street
Natick, MA 01760-5020

APPENDIX J. MRE VIII Final Questionnaire

MRE VIII

0

8. We would like your honest evaluation of the MRE items you ate. Using the scale below, please fill in the circle below the number that best describes your opinion of each item. If you never tried an item, fill in the circle under "0".

NEVER TRIED	DISLIKE EXTREMELY	DISLIKE VERY MUCH	DISLIKE MODERATELY	DISLIKE SLIGHTLY	NEITHER LIKE NOR DISLIKE	LIKE SLIGHTLY	LIKE MODERATELY	LIKE VERY MUCH	LIKE EXTREMELY
0	1	2	3	4	5	6	7	8	9

MRE ITEMS

	0	1	2	3	4	5	6	7	8	9
1. Pork w/ Rice and BBQ Sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Corned Beef Hash	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Chicken Stew	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Omelet with Ham	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Spaghetti with Meat Sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Chicken a la King	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Beef Stew	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Ham Slice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Meatballs with Rice and Sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Tuna with Noodles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Chicken and Rice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Escalloped Potatoes with Ham	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Crackers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Potato au Gratin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Cheese Spread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Jelly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Peanut Butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Applesauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Fruit Mix	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Peaches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Pears	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Strawberries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Brownie	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Cherry Nut Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Chocolate Covered Cookie	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Maple Nut Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Oatmeal Cookie Bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Chocolate Nut Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(Continued on next page)

(Continued)

NEVER TRIED | DISLIKE EXTREMELY | DISLIKE VERY MUCH | DISLIKE MODERATELY | DISLIKE SLIGHTLY | NEITHER LIKE NOR DISLIKE | LIKE SLIGHTLY | LIKE MODERATELY | LIKE VERY MUCH | LIKE EXTREMELY
0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

MRE ITEMS	0	1	2	3	4	5	6	7	8	9
29. Grape Beverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Orange Beverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Lemon-Lime Beverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. Cherry Beverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Cocoa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Coffee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. Tootsie Roll	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. Charms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. M & M's	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. Caramel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. Gum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. Hot Sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. Cream Substitute	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. Sugar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. Salt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. Additional Items _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Do you think any food or beverages should be DROPPED from the MRE?

☐ YES

☐ NO

If YES, please list the item(s). _____

10. Do you think any food or beverages should be ADDED to the MRE?

☐ YES

☐ NO

If YES, please list the item(s). _____

11. For the following questions, use the scale below to indicate how much you liked/disliked the MRE.

Never Tried	Dislike Extremely	Dislike Very Much	Dislike Moderately	Dislike Slightly	Neither Like Nor Dislike	Like Slightly	Like Moderately	Like Very Much	Like Extremely
0	1	2	3	4	5	6	7	8	9

	0	1	2	3	4	5	6	7	8	9
APPEARANCE of the MRE?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VARIETY OF FOODS in the MRE?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
OVERALL how much did you LIKE the MRE?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Please use the following scale to rate the PORTION SIZES of the following MRE items?

MUCH TOO SMALL	SOMEWHAT TOO SMALL	JUST RIGHT	SOMEWHAT TOO LARGE	MUCH TOO LARGE
1	2	3	4	5

	1	2	3	4	5
Entrees (main dish)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Starches (potato, crackers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spreads (cheese, peanut butter, jelly)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Desserts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beverages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Candy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Out of 12 MRE meals, how many of those meals should include the following?

	No Meals	1	2	3	4	5	6	7	8	9	10	11	All Meals
Crackers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Desserts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Candy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beverage Base	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cheese Spread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peanut Butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jelly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peanut Butter and Jelly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coffee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cocoa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. On the average, how much time were you allowed to eat a meal? (please specify) _____ minutes ☐

15. How much time would you LIKE to have to eat a meal? (please specify) _____ minutes

16. When you ate the following meals did you usually: (fill in all that apply)

BREAKFAST

LUNCH

DINNER

a. Relax and enjoy your meal time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Move while eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Have to eat quickly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Other (specify) _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. How often have you had the MRE before this exercise?

- ☐ a. Never
☐ b. Once
☐ c. Several times
☐ d. Many times

18. Did you eat any food during this exercise other than the rations provided? ☐ YES ☐ NO

If YES, please list the foods, how much you ate of each, and how often you ate them.

FOOD	HOW MUCH	HOW MANY TIMES
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

14.	<input type="text"/>	15.	<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>

19. What do you like the most about the MRE?

20. What do you like the least about the MRE?

21. Do you have any other comments about the MRE?

APPENDIX K. SEP MRE Final Questionnaire

MRE FINAL QUESTIONNAIRE

SEP MRE

Thank you for participating in our MRE evaluation. We would like to ask you your overall opinion of the MRE. Your opinions will be very important in determining any changes that will be made in the ration. Your answers will be kept confidential. Please answer honestly and thoughtfully.

1. Your name: _____
2. Your Social Security Number (Last four digits only): _____
3. Your rank: E-_____ W-_____ O-_____
4. Your Company: _____ Platoon: _____
5. Do you think you gained or lost weight during this exercise?

☐ Gained ☐ Lost ☐ Neither gained nor lost weight

If you think you GAINED weight, what were some of the reasons?

- ☐ a. Ate too much food
- ☐ b. Drank too much water/beverage
- ☐ c. Too little physical activity
- ☐ d. Other (specify) _____

If you think you LOST weight, what were some of the reasons?

- ☐ a. Ate too little food
- ☐ b. Drank too little water/beverage
- ☐ c. Too much physical activity
- ☐ d. Other (specify) _____

6. How easy/difficult was it to obtain water? Fill in the circle under your answer.

Extremely Difficult	Moderately Difficult	Somewhat Difficult	Neither Easy Nor Difficult	Somewhat Easy	Moderately Easy	Extremely Easy
1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. How did you obtain water? Fill in the circle next to all answers that apply.

- ☐ a. From a stream
- ☐ b. From a lake or pond
- ☐ c. 5 gallon cans
- ☐ d. Water Buffalo
- ☐ e. Other (please write in) _____

DO NOT WRITE BELOW THIS LINE

GP
A ☐
B ☐

SUBJ

0 1 2 3 4 5 6 7 8 9

E
O
WO

1 2 3 4 5 6 7 8 9

B
P
S

0 1 2 3 4 5 6 7 8 9

124

Page 1T

4055

SURVEY ACT WOT

8. We would like your honest evaluation of the SEP MRE items you ate. Using the scale below, please fill in the circle below the number that best describes your opinion of each item. If you never tried an item, fill in the circle under "0".

NEVER TRIED	DISLIKE EXTREMELY	DISLIKE VERY MUCH	DISLIKE MODERATELY	DISLIKE SLIGHTLY	NEITHER LIKE NOR DISLIKE	LIKE SLIGHTLY	LIKE MODERATELY	LIKE VERY MUCH	LIKE EXTREMELY
0	1	2	3	4	5	6	7	8	9

SEP MRE ITEMS

	0	1	2	3	4	5	6	7	8	9
1. Pork w/ Rice and BBQ Sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Spaghetti with Meat Sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Ham Slices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Tuna with Noodles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Chicken and Rice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Escalloped Potatoes with Ham	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Beef and Mushroom Gravy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Pork Chow Mein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Smokey Franks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Creamed Chipped Beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Cheese Pizza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Beef and Cheese Pocket	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Crackers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Pouch Bread -- White	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Pouch Bread -- Wheat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Biscuit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Cheese Spread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Peaches (Dehydrated)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Pears (Dehydrated)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Peaches (Wet Pack)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Pears (Wet Pack)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Cheese Curds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Chow Mein Noodles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Onion Rings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Pretzel Sticks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Tavern Nuts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Potato Sticks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Corn Chips	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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(Continued)

NEVER
TRIED

DISLIKE
EXTREMELY

DISLIKE
VERY
MUCH

DISLIKE
MODERATELY

DISLIKE
SLIGHTLY

NEITHER
LIKE NOR
DISLIKE

LIKE
SLIGHTLY

LIKE
MODERATELY

LIKE
VERY
MUCH

LIKE
EXTREMELY

0 1 2 3 4 5 6 7 8 9

MRE ITEMS

0 1 2 3 4 5 6 7 8 9

29. Chocolate Covered Cookie	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Orange Pound Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Lemon Pound Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. Pineapple Pound Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Vanilla Pound Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Chocolate Pound Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. Almond Chew Bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. Orange Coconut Chew Bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. Tropical Punch Chew Bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. Oatmeal Hermit Bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. Coffee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. Grape Beverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. Lemon-Lime Beverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. Cherry Beverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. Orange Beverage (Green Package)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. Orange Beverage (White Package)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. Apple Cider	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. Lemon Tea Mix	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. Vanilla Shake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. Chocolate Shake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. Strawberry Shake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. M & M's	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. Caramel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. Gum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. Hot Sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. Cream Substitute	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. Sugar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. Salt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. Ketchup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. Mustard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59. Ketchup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60. Additional Items	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61. _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62. _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Do you think any food or beverages should be DROPPED from the MRE?

☐ YES ☐ NO

If YES, please list the item(s). _____

10. Do you think any food or beverages should be ADDED to the MRE?

☐ YES ☐ NO

If YES, please list the item(s). _____

11. For the following questions, use the scale below to indicate how much you liked/disliked the MRE.

Never Tried	Dislike Extremely	Dislike Very Much	Dislike Moderately	Dislike Slightly	Neither Like Nor Dislike	Like Slightly	Like Moderately	Like Very Much	Like Extremely
0	1	2	3	4	5	6	7	8	9

APPEARANCE of the MRE?

0 1 2 3 4 5 6 7 8 9
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

VARIETY OF FOODS in the MRE?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

OVERALL how much did you LIKE the MRE?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

12. Please use the following scale to rate the PORTION SIZES of the following MRE items?

MUCH TOO SMALL 1	SOMEWHAT TOO SMALL 2	JUST RIGHT 3	SOMEWHAT TOO LARGE 4	MUCH TOO LARGE 5
------------------------	----------------------------	--------------------	----------------------------	------------------------

Entrees (main dish)
 Starches (potato, bread, crackers)
 Spread (cheese)
 Snacks
 Wet Pack Fruit
 Dry Pack Fruit
 Pound Cakes
 Fruit Chew Bars
 Cookie/Candy
 Beverages
 Milkshakes

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Please rate how easy or difficult you found each of the following aspects of preparing the milkshakes. ☐ Fill in one oval for each question.

Extremely
Difficult
1

Moderately
Difficult
2

Somewhat
Difficult
3

Neither
Easy Nor
Difficult
4

Somewhat
Easy
5

Moderately
Easy
6

Extremely
Easy
7

	1	2	3	4	5	6	7
Opening the packet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding the printed directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Following the printed directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Closing the packet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mixing the powder with the water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drinking from the packet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Was the mixing time for the milkshake sufficient to dissolve the powder? ☐ YES ☐ NO

If NO, how long did it take to dissolve the powder? _____ minutes

15. Was drinking from the milkshake package difficult? ☐ YES ☐ NO

If YES, please suggest new ways to package the milkshake. _____

16. Out of 12 MRE meals, how many of those meals should include the following?

	No Meals	1	2	3	4	5	6	7	8	9	10	11	All Meals
Crackers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snacks (corn chips, pretzels, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wet Pack Fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dry Pack Fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pound Cakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruit Chew Bars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Candy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beverage Base	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Milkshakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coffee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cocoa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cheese Spread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peanut Butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jelly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peanut Butter and Jelly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

17. Please rate the condition of the following foods when you opened the package

	Whole	Partially Crushed	Crushed
Corn chips	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tavern nuts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chow mein noodles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Potato Sticks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Onion Rings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pretzel Sticks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cheese Curds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pound Cakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pouch Bread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. How often were the snacks damaged so that they could not be eaten?

Never	Rarely	Sometimes	Usually	Always
1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Did the snack items "fit" with the rest of the MRE items in that meal? ☐ YES ☐ NO

20. Did you eat the snack items (fill in as many as apply):

☐ 1. Alone
☐ 2. As part of the meal they came with
☐ 3. As a snack during a different time of the day
☐ 4. Other (please specify) _____

21. Did you eat the chow mein noodles? ☐ YES ☐ NO

If YES, did you (fill in as many as apply):

☐ a. eat them out of the package
☐ b. mix the noodles with another food
☐ c. other (please specify) _____

If you mixed the noodles with another food, what food(s) did you mix them with? _____

22. Did you eat the onion rings? ☐ YES ☐ NO

If YES, did you (fill in as many as apply):

☐ a. eat them out of the package
☐ b. add the onion rings to another food
☐ c. other (please specify) _____

If you added the onion rings to another food, what food(s) did you add them to? _____

23. When you ate the fruit chew bars did the coating fall off?

Never

1
☐

Rarely

2
☐

Sometimes

3
☐

Usually

4
☐

Always

5
☐

If the coating fell off, which fruit chew bars did this happen to? _____

24. On the average, how much time were you allowed to eat a meal? (please specify) _____ minutes

25. How much time would you LIKE to have to eat a meal? (please specify) _____ minutes

26. When you ate the following meals did you usually: (fill in all that apply)

	BREAKFAST	LUNCH	DINNER
a. Relax and enjoy your meal time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Move while eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Have to eat quickly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Other (specify) _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. How often have you had the MRE before this exercise?

☐
☐
☐
☐

a. Never

b. Once

c. Several times

d. Many times

28. Did you eat any food during this exercise other than the rations provided? ☐ YES ☐ NO

If YES, please list the foods, how much you ate of each, and how often you ate them.

FOOD	HOW MUCH	HOW MANY TIMES
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

29. Each of the following items that you ate during the test were new to the MRE. Please indicate whether you liked them better, worse, or the same as you EXPECTED

	BETTER THAN EXPECTED	WORSE THAN EXPECTED	SAME AS EXPECTED
1. Beef and Mushroom Gravy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Pork Chow Mein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Smokey Franks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Creamed Chipped Beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Cheese Pizza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Beef and Cheese Pocket (Burrito)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. White Bread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Wheat Bread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Peaches in Syrup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Pears in Syrup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Cheese Curis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Chow Mein Noodles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Onion Rings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Pretzel Sticks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Tavern Nuts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Potato Sticks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Corn Chips	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Orange Pound Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Lemon Pound Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Vanilla Pound Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Chocolate Pound Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Almond Chew Bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Orange Coconut Bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Tropical Punch Chew Bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Oatmeal Hermit Bar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Chocolate Shake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Vanilla Shake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Strawberry Shake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Apple Cider	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Iced Tea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30. What do you like the most about the MRE?

24.	<input type="text"/>	25.	<input type="text"/>
	<input type="text"/>		<input type="text"/>
	0 1 2 3 4 5 6 7 8 9		0 1 2 3 4 5 6 7 8 9

31. What do you like the least about the MRE?

32. Do you have any other comments about the MRE?

APPENDIX L. Field Acceptance Ratings of SEP MRE

Field mean (SD) acceptance ratings of SEP MRE.

	<u>Mean</u>	<u>SD</u>
<u>ENTREES</u>		
Pork w/Rice, BBQ Sauce	7.1	1.9
Spaghetti, Meat Sauce	7.8	1.0
Ham Slices	7.9	1.4
Tuna w/Noodles	6.8	1.4
Chicken and Rice	7.5	1.4
Esc. Potatoes w/Ham	7.1	1.1
Beef w/ Mushroom Gravy	7.0	1.7
Pork Chow Mein	7.6	1.7
Smokey Franks	8.0	0.9
Creamed Chipped Beef	6.6	2.3
Cheese Pizza	6.5	2.2
Beef and Cheese Pocket	7.7	1.7
<u>STARCHES</u>		
Crackers	6.4	1.5
Pouch Bread - White	7.4	1.6
Pouch Bread - Wheat	8.0	1.0
Biscuit	6.8	1.7
<u>SPREADS</u>		
Cheese Spread	7.5	1.4
<u>FRUITS</u>		
Peaches (dehydrated)	7.0	1.6
Pears (dehydrated)	8.0	1.2
Peaches (wet pack)	8.1	1.3
Pears (wet pack)	8.6	0.4
<u>DESSERTS</u>		
Choc. Covered Cookie	7.4	1.8
Orange Pound Cake	8.1	0.9
Lemon Pound Cake	8.2	1.2
Pineapple Pound Cake	8.1	1.2
Vanilla Pound Cake	7.9	1.6
Chocolate Pound Cake	8.0	1.2
Almond Chew Bar	4.8	2.8
Orange Coconut Bar	4.8	2.7
Tropical Punch Chew Bar	6.3	2.6
Oatmeal Hermit Bar	6.2	1.7

BEVERAGES

Coffee	8.1	1.1
Grape Beverage	7.8	1.3
Lemon-Lime Beverage	8.1	1.0
Cherry Beverage	7.5	1.3
Orange Beverage (Green)	7.9	1.3
Orange Beverage (White)	7.4	1.6
<i>Apple Cider Mix</i>	7.5	1.3
<i>Lemon Tea Mix</i>	6.5	2.1

SHAKES

<i>Vanilla Shake</i>	7.6	1.4
<i>Chocolate Shake</i>	7.6	1.5
<i>Strawberry Shake</i>	8.0	1.0

SNACKS

<i>Cheese Curls</i>	8.0	1.3
<i>Chow Mein Noodles</i>	7.5	1.3
<i>Onion Rings</i>	6.8	2.4
<i>Pretzel Sticks</i>	7.4	1.2
<i>Tavern Nuts</i>	7.8	1.1
<i>Potato Sticks</i>	7.7	1.0
<i>Corn Chips</i>	7.7	1.4

CANDY

M&M	8.5	0.8
Caramel	8.1	1.3
Gum	8.2	1.1

OTHER

Hot Sauce	7.8	1.3
Cream Substitute	7.4	2.0
Salt	7.8	1.7
Sugar	7.7	1.4
Ketchup	7.9	1.3
Mustard	7.7	1.4
Relish	7.6	1.7

* New SEP items appear in italics

APPENDIX M. Field Acceptance Ratings of MRE VIII

Field mean (SD) acceptance ratings of MRE VIII.

	<u>Mean</u>	<u>SD</u>
<u>ENTREES</u>		
Pork w/Rice, BBQ Sauce	6.6	1.8
Spaghetti, Meat Sauce	7.7	1.0
Ham Slices	7.6	1.2
Tuna with Noodles	5.9	2.2
Chicken and Rice	7.5	1.5
Esc. Potatoes w/Ham	6.9	1.5
Corned Beef Hash	6.5	1.6
Chicken Stew	6.9	1.1
Omelet w/Ham	7.3	1.1
Chicken ala King	6.7	1.6
Beef Stew	6.5	1.6
Meatballs, Rice and Sauce	6.4	1.7
<u>STARCHES</u>		
Crackers	6.7	1.1
Potato au Gratin	5.9	1.9
<u>SPREADS</u>		
Cheese Spread	7.4	1.2
Jelly	7.0	1.3
Peanut Butter	6.7	1.0
<u>FRUITS</u>		
Peaches	6.9	1.5
Pears	7.5	1.0
Applesauce	7.6	1.3
Fruit Mix	7.4	1.3
<u>DESSERTS</u>		
Choc. Covered Cookie	7.1	1.8
Brownies	6.0	1.4
Cherry Nut Cake	7.1	1.5
Maple Nut Cake	6.9	1.3
Oatmeal Cookie Bar	7.0	1.4
Chocolate Nut Cake	7.5	1.9
<u>BEVERAGES</u>		
Coffee	7.6	1.1
Grape Beverage	7.6	1.2
Lemon-Lime Beverage	7.4	1.4

Cherry Beverage	7.8	1.3
Orange Beverage	7.4	1.3
Cocoa	7.9	1.1

CANDY

M&M	8.2	1.1
Caramel	7.7	1.5
Charms	7.3	2.0
Gum	7.3	1.4

OTHER

Hot Sauce	7.5	1.2
Cream Substitute	7.0	1.3
Sugar	7.1	1.3
Salt	6.8	1.9

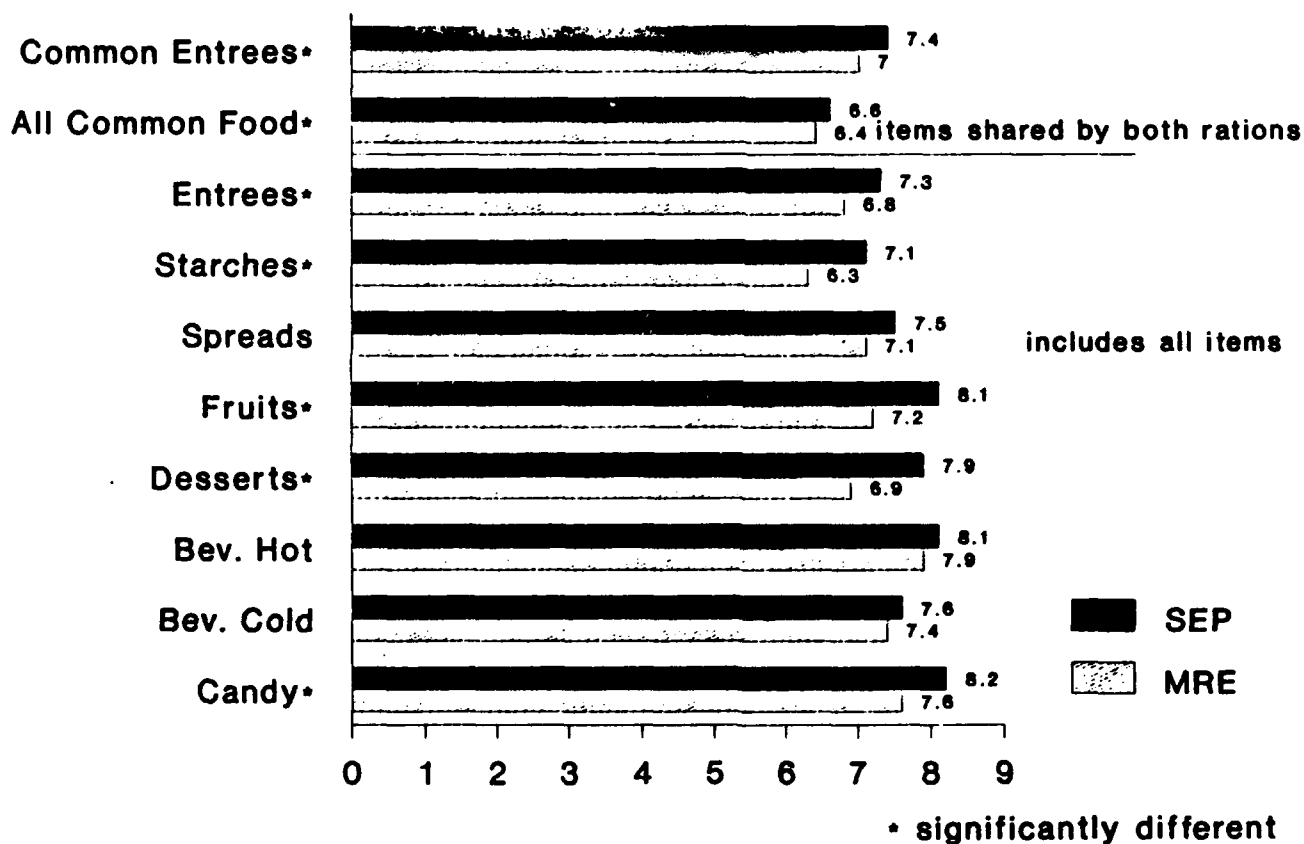
APPENDIX N. Field Acceptance Ratings of Major Ration Food Groups

Field mean (SD) acceptance ratings of major ration food groups.

	<u>SEP MRE</u>	<u>MRE VIII</u>	<u>t</u>	<u>df</u>
Entrees	7.3 (.76)	6.8 (.78)	2.90	73
Starch	7.1 (1.1)	6.3 (1.1)	3.00	72
Spreads	7.5 (1.4)	7.1 (1.0)	ns	
Fruits	8.1 (.81)	7.2 (1.3)	3.21	47
Desserts	7.9 (.86)	6.9 (.97)	4.95	73
Beverage-Hot	8.1 (1.1)	7.9 (1.0)	ns	
Beverage-Cold	7.6 (1.3)	7.4 (1.2)	ns	
Candy	8.2 (.84)	7.6 (1.0)	2.67	70
Other	7.6 (1.7)	7.3 (1.1)	ns	

APPENDIX O. Mean Ration Acceptability (Field) by Food Group

Mean Ration Acceptability by Food Group Field Ratings



**APPENDIX P. Field Acceptance Ratings of Food Items Common
to SEP MRE and MRE VIII**

**Field mean (SD) acceptance ratings of food items common to both
to both SEP MRE and MRE VIII rations.**

	<u>SEP MRE</u>	<u>MRE VIII</u>	<u>t</u>	<u>df</u>
Pork w/Rice, BBQ Sauce	7.1(1.9)	6.6(1.8)	ns	
Spaghetti, Meat Sauce	7.8(1.0)	7.7(1.0)	ns	
Ham Slices	7.9(1.4)	7.6(1.2)	ns	
Tuna w/Noodles	6.8(1.4)	5.9(2.2)	ns	
Chicken w/Rice	7.5(1.4)	7.5(1.5)	ns	
Esc. Potatoes w/Ham	7.1(1.1)	6.9(1.5)	ns	
Crackers	6.4(1.5)	6.7(1.0)	ns	
Cheese Spread	7.5(1.4)	7.4(1.2)	ns	
Peaches (dehydrated)	7.0(1.5)	6.9(1.5)	ns	
Pears (dehydrated)	8.0(1.2)	7.5(1.0)	ns	
Choc. Covered Cookie	7.4(1.8)	7.1(1.8)	ns	
Coffee	8.1(1.1)	7.6(1.1)	ns	
Grape Beverage	7.8(1.3)	7.6(1.2)	ns	
Lemon-Lime Beverage	8.1(1.0)	7.4(1.4)	ns	
Cherry Beverage	7.5(1.3)	7.8(1.3)	ns	
M&M	8.5(.76)	8.2(1.1)	ns	
Caramel	8.1(1.3)	7.7(1.5)	ns	
Gum	8.2(1.1)	7.3(1.4)	2.6	60
Hot Sauce	7.8(1.3)	7.5(1.2)	ns	